Meta-perceptions in work teams

Grutterink, Hanneke

Meta-perceptions in work teams:

A multi-level model of antecedents and consequences of perceived expertise affirmation

Hanneke Grutterink

Published by: University of Groningen, Groningen, The Netherlands

Printed by: Ipskamp Drukkers B.V., Enschede, The Netherlands

ISBN: 978-90-367-6365-3 (book)
ISBN: 978-90-367-6366-0 (e-book)

RIJKSUNIVERSITEIT GRONINGEN

Meta-perceptions in work teams:

A multi-level model of antecedents and consequences of perceived expertise affirmation

Proefschrift

ter verkrijging van het doctoraat in de
Economie en Bedrijfskunde
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus, dr. E. Sterken,
in het openbaar te verdedigen op
donderdag 26 september 2013
om 14.30 uur

door

Hanneke Grutterink

geboren op 16 mei 1978
te Borne

Promotores:	Prof. dr. G.S. van der Vegt
	Prof. dr. H.B.M. Molleman
	Prof. dr. K.A. Jehn
Beoordelingscommissie:	Prof. dr. J.S. Bunderson
	Prof. dr. O. Janssen
	Prof. dr. K.I. van Oudenhoven-van der Zee

CONTENTS

CHAPTER 1

GENERAL INTRODUCTION

"I just love working in this team. It's one of the most satisfying jobs I've ever had. I thrive on being able to use my skills and being appreciated by my fellow team members for what I know, while they also know my limitations, allowing me to learn lots of new skills at the same time. This job makes me feel useful and part of something special."

Examples like the one above show that people care a lot about how they think others see them (e.g., Kenny, 1994; Sheldon, & Johnson, 1993). In order to get an idea of the impression one makes, people constantly monitor reactions toward them during social interaction. This becomes especially clear with public appearances such as a speech or a presentation when people want to know afterwards: "*How did I come across?", "How did the audience react?", "Do you think they liked me?"* Such social feedback, whether it is in the form of compliments, a critical note, or non-verbal reactions, helps people in their attempts to read the minds of others and to draw conclusions about how they are perceived (Rentsch & Woehr, 2004). These beliefs about how someone thinks s/he is viewed by others are called *meta-perceptions* (Kenny, 1994).

Meta-perceptions fall under the umbrella of interpersonal perception: an area of social psychology that refers to the judgments people form about one another in their daily interactions (Kenny, 1994). These judgments can be about them*selves* (i.e. *self*-perception, e.g., "I am extroverted"), about *others* (i.e. *other*-perception, e.g., "Jane is introverted"), or about *others' perception of themselves* (i.e. *meta*-perception, e.g., "I think that Jane thinks I am introverted"). Interpersonal perception is often contrasted to object perception. While object perception helps people navigate in the real world (e.g., "John sees that his bike has a flat tire and, therefore, goes by car"), interpersonal perception helps people navigate in the social world (e.g., "John seems cranky today, I will ask for his advice tomorrow").

Someone's meta-perceptions are important determinants of his or her behavior. That is, individuals often adjust their actions to how they think others perceive them. For example, people who think that specific others view them negatively are more likely to start interactions with these others in an angry and hostile manner (Butz & Plant, 2006). In contrast, if people think that members of a group they belong to recognize their unique characteristics, they show more commitment, take more responsibility, and

accept more obligations (e.g., Tyler & Blader, 2003). Because of this importance of meta-perceptions for the behavior of the person that holds the meta-perceptions, meta-perceptions have been examined in many different settings. These settings vary from intimate relations studies that typically examine effects of meta-perceptions of one's romantic partner on relationship satisfaction (e.g., Murray, Holmes, & Collins, 2006), to intergroup settings in which people are reluctant to interact with members from a different social group because they think they hold a negative image of them (cf. Gordijn, Finchilescu, Brix, Wijnants, & Koomen, 2008).

Since meta-perceptions have been proven to be important predictors of affect and behavior in many different settings, one would expect that they will also play an important role in work settings. However, surprisingly, research regarding meta-perceptions in work settings is very scarce (see King, Kaplan, & Zaccaro, 2008, for a similar observation). Below, I will present the result of a literature review to provide an overview of the research on meta-perception in different contexts, and to show that the role of meta-perceptions has largely been neglected in research on work and work team settings. I will categorize the meta-perception literature in four clusters based on the keywords mentioned in the articles under scrutiny and the type of journals they were published in.

Overview of the Meta-Perception Literature

Entering the search terms *meta-perception* and *metaperception* in the Web of Science database yielded 63 results. I included all empirical articles in this review that were consistent with the abovementioned definition of meta-perception (i.e. people's beliefs about how they are seen by others). For the sake of comparison, I excluded the qualitative studies. This resulted in a final sample of 39 articles that are listed in Table 1.1. Even though this overview is not exhaustive because I did not search on related but different constructs as meta-accuracy or meta-insight, it gives a good general and representative overview of the meta-perception literature. I grouped the articles in four clusters related to different psychological disciplines: *intergroup relations, interpersonal perception, intimate relations,* and *clinical psychology*. Two studies did not fall clearly into one of these categories, therefore, they are not further discussed. The studies in each cluster focus on different aspects of meta-perceptions. Therefore, I give a short overview of each cluster in which I discuss the *setting*/*sample* used in the studies, as well as the main *content* and the *effects* of the meta-perceptions.

Table 1.1

Global overview of the metaperception literature per cluster

Author(s)	Content of metaperception	x's metaperception of (y)[a]
Intergroup relations		
Gordijn et al. (2008)	Negative stereotype (South-Africa)	Ethnic in-group member (ethnic out-group member)*
Santuzzi (2007)	9 traits (e.g., confidence, broad-minded, wise, optimistic, considerate)	Smoker (non-smoker)*
Santuzzi (2011)	Personality traits (e.g., agreeableness, optimism)	Disabled individual (not-disabled)*
Swim et al. (2009)	Negative evaluations of LGB individuals	LGB individual (public)*
Tuohy & Wrennall (1995)	Attitudes toward and stereotypes of police	Policeman (public)***
Wout et al. (2010)	Competence, warmth	Ethnic in-group member (ethnic out-group member*)
Interpersonal perception		
Albright & Malloy (1999)	Personality traits (Big Five), social competence	Self (other)*
Albright, Forest, & Reiseter (2001)	Traits (e.g., motivated, optimistic, nonjudgmental, hopeful, confident)	Self (unacquainted peer)*
Carlson, Vazire, & Furr (2011)	Traits (e.g., Big Five, intelligence, funny)	Self (new acquaintance/friend)*
Carlson & Furr (2009)	Personality traits (Big Five)	Self (parent/college friend/hometown friend)*
Elfenbein, et al. (2009)	Value as a future professional contact	Self (other)*
Hebert & Vorauer (2003)	Computer skills, liking, personality traits	Self (other)*
Levesque (1997)	Liking	Self (other)*
Malloy & Janowski (1992)	Leadership, quality of ideas	Self (other)*
Malloy et al. (1997)	Personality traits (Big Five)	Self (family member, friends, co-worker)****
Malloy et al. (2007)	Traits & skills (e.g., attractiveness, reading, strength, popularity)	Self (peers)**
Ohtsubo et al. (2009)	15 traits (e.g., positivity, kindness, lenience, confidence, optimism)	Self (opposite sex friend)*
Shechtman & Kenny (1994)	Oral proficiency, leadership, teacher skills	Self (other female student)*
Tan & Jamal (2006)	Technical competence (i.e. whether they know the correct answer)	Auditor (subordinates, peers, superiors)***
Vorauer & Cameron (2002)	Values, traits, behavior	Self (friend/romantic other/parent)*
Intimate relations		
Bellmore & Cillessen (2003)	Acceptance, rejection	Self (opposite vs. same sex peer)**
Cook & Douglas (1998)	Firmness, cooperativeness, assertiveness	Self (parent/sibling)*
Dijkstra & Barelds (2011)	Attractiveness, self-esteem, bmi, body image, demographics	Woman (partner, family and friends, strangers)****
Furnham et al. (1997)	Attractiveness, youthfulness, healthiness	Self (member of opposite sex)*

Marcus & Miller (2003)	Physical attractiveness	Self (member of opposite sex)*
Preuss & Alicke (2009)	Dating popularity	Self (opposite-sex peer)*
Sciangula & Morry (2010)	40 traits (e.g., quiet, reserved, talkative, caring, loving, affectionate)	Self (spouse)*
Sherman et al. (2001)	Personality, liking, similarity	Self (interaction partner: face to face vs. via internet)*
Swami et al. (2010).	Physical attractiveness	Self (spouse)****
Clinical psychology		
Carlson, Vazire, & Oltmanns (2011)	Personality traits, reputation (e.g., attractiveness, arrogance, honesty)	Narcissist (new acquaintance, friend, coworker)*
Corcoran (1996)	Friendliness, relaxation	Self (unacquainted opposite sex peer)*
Corcoran & Michels (1997)	Friendliness, relaxation	Self (unacquainted opposite or same sex peer)*
De Jong et al. (2006)	Severity/intentionality of action, traits, likeability, reliability.	Blushing phobic (other)*
De Jong & Peters (2005)	Severity/intentionality of action, traits, likeability, reliability.	Blushing phobic (other)*
Dijk & de Jong (2009)	Liking, evaluation as a person, global competence, social skills	Blushing phobic (other)*
Oltmanns et al. (2005)	Pathological personality traits	Self (fellow workers)****
Tsai & Reis (2009)	Personality (e.g., warmth, attractiveness, intelligence, leadership)	Lonely person (other)*
Other		
De Waal-Andrews & Beest (2012)	Warmth	Self (fictitious fellow gamer)*
Back et al. (2009)	Attractiveness, intelligence, likeability	Self (other group member)*

[a] For example, the article from Santuzzi (2011) is about how a disabled individual thinks non-disabled individuals perceive his or her personality (e.g., how optimistic does s/he think non-disabled people find him/her.).

* students, ** children, ***employees, ****other

Intergroup relations

The common denominator of the meta-perception studies in this cluster is their intergroup *setting*. In an intergroup setting, individuals from at least two different social groups interact or anticipate interaction. The social groups studied in this cluster vary from policemen to members of minority groups based on people's ethnicity or sexual preference. The basic premise about intergroup contact here is that the cues people rely on in meta-perception formation depend on whether their interaction partner is from their own group (an in-group member) or from a different group (an out-group member). That is, when interacting with an out-group member, meta-perceptions are expected to be based on stereotypes instead of individual characteristics such as personality or values (Frey & Tropp, 2006; King et al., 2008). The participants in these studies are almost exclusively students from a minority or a lower-status group that anticipate interaction with students from a majority or a higher-status group (cf. King et al., 2008) (e.g., gay vs. heterosexual individuals, or Whites vs. Blacks). The only exception to the student samples is the study of Tuohy and Wrennall (1995) about Scottish policemen's view of how the public sees them.

The *content* of the meta-perceptions in these articles is the stereotype of out-group members toward the social group the perceiver belongs to. A stereotype is a general, often negative view that people have of an individual solely based on the social group this individual belongs to. For example, the stereotype of South-African Blacks is that they are unreliable and unmannerly. A study from Gordijn et al. (2008) has shown that Blacks indeed tend to *think* that Whites (out-group members) hold this stereotypic image of them and see them as unreliable and unmannerly. For that reason, this specific category of meta-perception is also referred to as meta-*stereotypes*. Meta-stereotypes are "normal" meta-perceptions, but with a specific content: the current stereotype of the social group in question (e.g., Vorauer, Hunter, Main, & Roy, 2000).

The studies in this intergroup relations cluster primarily examine potential buffers against the development of negative meta-perceptions in intergroup relations such as friendship network diversity (Wout, Murphy, & Steele, 2010). However, some also report *effects* of these meta-stereotypes. Most importantly, believing to be viewed negatively due to membership of a group affects feelings toward members of the out-group, and can cause anxiety (Gordijn et al., 2008). For example, a Black student might

refrain from becoming friends with a White student because he may think that this White student holds a stereotypic image of him and sees him as unreliable and unmannered. Because meta-stereotypes make people feel that they cannot be themselves in intergroup interactions, they may affect intergroup interaction regardless of this particular White student's actual perception of Black people (Wout et al., 2010). Also, negative meta-perceptions such as perceived heterosexism by gay people have been shown to affect their psychological well-being (Swim, Johnston, & Pearson, 2009)

Interpersonal perception

The *setting* for meta-perception studies in the interpersonal perception cluster is mainly a student sample. There are only three out of the fourteen studies in this cluster that do *not* use student samples. That is, Malloy, Albright, Kenny, Agatstein, and Winquist (1997) recruited volunteers by phone and Malloy, Albright, and Scarpati's (2007) sample comprised school children. Finally, there is one work setting in which employees were asked to what extent they thought their superiors, peers, and subordinates thought they would know the correct answer to a specific accountancy problem (Tan & Jamal, 2006). However, in contrast to the intergroup relations cluster, the main focus in the interpersonal perception cluster lies on the individual self in relation to other individuals instead of on the interaction between different social groups. This "other" individual may be a "generalized", a "differential" or a "dyadic" other (see Kenny, 1994 for a more extensive discussion of this distinction). A meta-perception of a "generalized" other refers to how someone thinks others *in general* see one (e.g., "People see me as extraverted"). A meta-perception of a "differential" other refers to how an individual thinks people from different *social groups* see him or her (e.g., "My co-workers see me as extraverted, but my family sees me as introverted"). Carlson and Furr (2009), for example, tried to differentiate between meta-perceptions from a parent, a college friend, and a hometown friend. Finally, a meta-perception of a "dyadic" other refers to how someone thinks a specific *other individual* sees him or her (e.g., "I think John sees me as extraverted, whereas Jane sees me as introverted").

The *content* of the meta-perceptions about the "generalized" other in this cluster most often consists of personality traits such as the Big Five (cf. Albright & Malloy, 1999) or individual qualities such as leadership skills (Malloy & Janowski (1992). In the setting with the "differential" or "dyadic" other, relational measures are also often used

such as liking (e.g., Levesque, 1997) or a student's expected value as a professional contact (Elfenbein, Eisenkraft, & Ding 2009).

The interpersonal perception studies in our literature review do not examine *effects* of meta-perceptions. Instead, they mainly focus on the discrepancy between meta-perception and other-perception. This is often referred to as meta-accuracy or meta-insight (Elfenbein et al., 2009). Research in this cluster has shown, for example, that self-observation on video (Albright & Malloy, 1999) and face-to-face rather than computer-mediated feedback (Hebert & Vorauer, 2003) can increase meta-accuracy. Moreover, findings from Carlson, Vazire, & Furr (2011) suggest that people have some genuine insight into how others see them and do not achieve meta-accuracy by only relying on the assumption that others see them similarly to how they see themselves.

Intimate relations

As the name indicates, the *setting* of the studies in this cluster is an intimate relationship. An intimate relationship is an interpersonal connection that involves physical and/or emotional intimacy (Brehm, Miller, Perlman & Campbell, 2002). In this category of meta-perception studies, the focus lies on the relationship between the self and a (potential) close other. The participants in these studies are generally college students who meta-perceive close others (e.g., family members, or [potential] dating partners). However, three of the studies in our review used different populations. Dijkstra and Barelds (2011) surveyed female respondents from a women's magazine, and Swami, Waters and Furnham (2010) studied a sample of men and women from the London population. Finally, Bellmore and Cillessen's (2003) article studied fourth grade children and their classmates.

The *content* of the meta-perceptions examined in these studies depends on the type of intimate relationship under scrutiny. In the case of relationships with spouses, or (potential) dating partners, the meta-perceptions are often about (physical) attractiveness (Marcus & Miller, 2003). For example, to what extent a person thinks that his/her partner finds him/her attractive. In the case of close peers the meta-perceptions are more about general popularity or liking (e.g., Cook & Douglas, 1998). Also, personality traits are examined in some studies. Sciangula and Morry (2010), for example, studied meta-perceptions regarding forty personality traits, including talkativeness, and being reserved or affectionate.

In this cluster some studies also report the *effects* of meta-perceptions on relationship quality. For example, Cook and Douglas (1998) show that greater perceived acceptance by same-sex peers (=meta-perception) leads to a more positive social standing in the peer system. Also, in romantic relationships, meta-perceptions of personality and attractiveness have been shown to predict romantic love, relationship satisfaction, and intention to quit the relationship (cf. Sciangula & Morry 2010; Swami et al., 2010).

Clinical psychology

The central question in this literature stream is whether people who score higher on clinical pathopsychological measures such as phobia or narcissism have different meta-perceptions than people from non-clinical groups. For example, do lonely people think others like them less (Tsai & Reis, 2009)? The claimed *setting* of the studies in this cluster is of a clinical nature. However, in all but one study these clinical variables are measured using (healthy) students. Only one study did not make use of student samples. Oltmanns, Gleason, Klonsky, and Turkheimer (2005) used a sample of 2026 Air Force recruits from an Air Force Base in Texas.

The *content* of the meta-perceptions in this cluster is generally related to the content of the clinical measures that are used. For example, when examining narcissists, the meta-perceptions focus on characteristics of narcissism, such as arrogance. That is, do narcissists think that they come across as more arrogant than people that are less narcissistic (Carlson, Vazire, & Oltmanns (2011)? The findings in this cluster show that meta-perceptions of pathological personality traits are generally positively associated with actual other-ratings even if the participants themselves disagree with these meta-perceptions. In other words, individuals have some knowledge, beyond their own beliefs about themselves (self-ratings), of what their peers think of them.

The studies in this cluster in this literature review have not looked at the *effects* of meta-perceptions.

Summary

There are three conclusions that can be drawn from this global literature review of these meta-perceptions studies. First, research on meta-perceptions in a work *setting* and especially in work teams, is scarce. Second, the *content* of the meta-perceptions is generally (pathopsychological) personality or stereotypes. Almost no research has focused on task-related characteristics. Third, little structural empirical knowledge

exists regarding the *effects* of meta-perceptions. Nevertheless, even though research on the effects of positive meta-perceptions in these studies is less prevalent than research on its development, the reported effects are all positive. Below, we will discuss these issues in more detail and identify voids in the literature. Based on this discussion, we will develop our research question and propose directions for research.

Gaps: Setting, Content, and Effects of Meta-Perceptions

Setting: meta-perceptions in work teams

The first conclusion from our literature review was that research has hardly examined meta-perceptions in a work context, let alone in a work team setting. This is an important realization because meta-perceptions have been theoretically argued, and, to a lesser extent, empirically shown to guide behavior in significant ways, and have the potential to strongly affect motivation and behavior at work. Moreover, people often spend more time at work than with their family and friends, and, therefore, it is important that they feel good at work. If they do not, they may become ill or may even leave the company. In the present dissertation I, therefore, examine meta-perceptions in a work context. More specifically, since work is more and more organized around teams (e.g., Devine, Clayton, Philips, Dunford, & Melner, 1999) I will focus on meta-perceptions in work teams. Members of work teams are, by definition, interdependent (Kozlowski & Ilgen, 2006), and research suggests that individuals are especially motivated to be viewed positively by people they depend on (see, for example, Stevens & Fiske, 2000). Hence, meta-perceptions may be particularly important in a work team context.

Even though, similar to all other types of perception, meta-perceptions originate at the individual level, one could expect that they may also translate into a collective, team-level perception. This idea is consistent with the abundance of research and theory about convergent team perception or emerging team climates. For example, in their overview of effective teams, Kozlowski and Ilgen (2006) mention that collective team beliefs may result from factors such as leadership, social interaction, sharing of perspectives, and collective sense making. Examining potential team-level meta-perception is important because for organizations it is not only interesting to know what may affect the performance and motivation of single individuals but also that of teams as a whole. Moreover, in a team context in which individuals are interdependent, it is important to also look at team-level outcomes. The above suggests that meta-perceptions may be important at multiple levels of analysis: the individual and the team

level of analysis. For that reason, I will adopt a multi-level lens in this dissertation and focus on meta-perception of both the individual team member as well as of teams as a whole.

The content of meta-perceptions: expertise

As mentioned above, the meta-perception literature has shown that people have beliefs about how others perceive them with regard to different areas. Several types of meta-perceptions have been studied, varying from liking (Reno & Kenny, 1992), to social behavior (Albright, & Malloy, 1999), and from personality traits (Malloy & Janowski, 1992) to personality disorders (Oltmanns et al., 2005). However, to my knowledge, there is no research that has specifically focused on meta-perception of expertise. It is important to focus on meta-perceptions of expertise, because it is one of the most important characteristics that people use to define who they are at work (see Molleman & Broekhuis, 2012; Molleman, Broekhuis, Stoffels, & Jaspers, 2010).

Moreover, in work teams expertise is a highly salient defining characteristic of the individual members (cf. MacPhail, Roloff, & Edmondson, 2009; Van der Vegt & Bunderson, 2005) because it is an important cognitive resource for the accomplishment of the team task (Faraj & Sproull, 2000), and, therefore, critical to team performance. Moreover, expertise is a highly salient social category for defining who a team member is (e.g., he is a psychologist) or is not (e.g., no, he is not an economist) (Zhong, Phillips, Leonardelli, & Galinsky, 2008). This is illustrated by the common observation that team members tend to answer the question "Who are you?" with a reference to their expertise domain (e.g., "I am Pete, I am a software developer"). Finally, expertise is a positive quality because it incorporates someone's strengths, talents and skills, derived from education, work experience, functional backgrounds and social memberships (Van der Vegt & Bunderson, 2005). Their expertise makes team members feel unique and distinct and able to offer a unique contribution to their team as an expert (Adarves-Yorno, Postmes, & Haslam, 2006; Brewer & Gardner, 1996). In teams, individual members are expected to integrate their expertise with workers across different specializations (e.g., Devine et al., 1999), making expertise an important and salient status characteristic of the individual team members. For these reasons, I focus on meta-perceptions of expertise in work teams.

The effects of meta-perceptions of expertise in work teams

Even though the effects of meta-perceptions I encountered in the literature were all positive, the number of studies focusing on the effects of meta-perceptions is small, and no research has addressed the effects of meta-perceptions with regard to expertise in work teams. Examining such effects is nevertheless important. This is evident from the example I started this chapter with and when one considers the numerous stories at parties in which people, for example, mention their "thankless job" and how they feel that the long hours they work for their team go unnoticed. This also becomes evident from a large survey study among 8,000 American employees that revealed that a lack of appreciation was the number three reason why they wanted to leave their current job (Malachowski, n.d.). People seem to complain a lot about the lack of recognition they receive at work and the fact that they think their co-workers do not realize how complicated their job is, how much effort they put into it and how they feel taken for granted at work. In short, people are very preoccupied with whether they think fellow worker acknowledge, respect and recognize their expertise. If employees think that others acknowledge their expertise, this may motivate them to go the extra mile and to provide this expertise to the other team members to help them to do their job properly. If employees feel that their knowledge and skills are not recognized, they may stop offering advice and helping co-workers. Since organizations increasingly organize work around teams in which employees with complementary expertise must cooperate in order to perform complex tasks, not sharing knowledge may undermine the performance of a team, and ultimately, the entire organization (e.g., Cabrera & Cabrera, 2002).

Toward a research question

In short, it seems common knowledge that people feel better, work harder, and stay longer in a work environment where they feel that their skills and abilities are recognized, acknowledged, and respected. But is this actually the case? Will people work harder and perform better if they believe their qualities are appreciated? Do teams perform better if there is an atmosphere in which members believe their fellow members acknowledge their strengths? What exactly is this belief of appreciation or affirmation of expertise? How is it different from other concepts that have been related to successful team work? How does it develop? These are questions I will try to answer in the present dissertation. More specifically, the goal of this dissertation is to advance

the understanding of the role of team members' beliefs about whether their fellow team members acknowledge, recognize and respect their knowledge, skills and abilities in work teams. As indicated above, I will adopt a multi-level lens to examine these meta-perceptions. At the individual level, I will refer to this type of meta-perception as *perceived expertise affirmation* and to *reciprocal expertise affirmation* at the team level (cf. MacPhail et al., 2009). I aim to develop a clearer view of what it is, how it develops and what its effects are for the performance of individual members as well as for teams as a whole.

Contributions

In the present dissertation, I aim to offer three important contributions. First, I will validate the construct of perceived expertise affirmation and develop a measure to assess it and examine important correlates of perceived expertise affirmation at both the individual and team levels of analysis.

Second, I will shed light on the development of perceived expertise affirmation in work teams, taking into account multiple levels of analysis. I will show that perceived expertise affirmation is an individual belief and discuss two individual-level antecedents. Moreover, I will argue and show that perceived expertise affirmation is not only relevant at the individual level of analysis but that, as a result of inter-team differences in longevity and size, work teams will also develop meaningful differences in their levels of perceived expertise affirmation. I will argue that in teams with high levels of perceived expertise affirmation a collective belief develops in which members believe their expertise is valued and respected, which I will refer to as reciprocal expertise affirmation (MacPhail et al., 2009).

Third, I propose that perceived expertise affirmation has important implications for both individual as well as team performance. At the individual level of analysis, I expect a direct relationship between perceived expertise affirmation and individual performance. At the team level of analysis, I expect that reciprocal expertise affirmation also has consequences for the effective functioning of work team as a whole. However, this relationship may be more complex. Because the interdependent nature of the tasks in work teams requires the coordination of individual members' contributions, I argue that reciprocal expertise affirmation alone is not sufficient for high team performance but also requires a coordination mechanism that helps to align the individual efforts. Teams that develop a high level of reciprocal expertise affirmation, will appreciate the

value of individuality and diversity and may reinforce expressions of individual differentiation by making members feel that everyone's expertise is important and valued, increasing motivation (Bettencourt & Sheldon, 2001; Jetten, Postmes, & McAuliffe, 2002). These heightened levels of motivation and efforts of individuals resulting from perceived expertise affirmation need to be coordinated in order to result in higher levels of team performance. Incorporating insights from the team cognition literature, that emphasize the importance of shared mental models for interpersonal coordination (e.g., Cannon-Bowers, Salas, & Converse, 1993; Rico, Sánchez-Manzanares, Gil, & Gibson, 2008), I propose that the effects of reciprocal expertise affirmation on team performance will depend on the extent to which team members have a shared mental model of "who knows what" in the team (cf. Austin, 2003; Wegner, 1986).

Overview of the Present Dissertation

In the present dissertation, I examine the role of perceived expertise affirmation in work teams. My main purpose is to shed light on the conceptualization of the construct, its development and correlates at the level of the individual team member and for teams as a whole. In order to address these questions, I conduct three studies that I report in the Chapters 2, 3, and 4. Each chapter is written as an independent article and can be read separately of the rest of the dissertation. As a result, there is some overlap between the chapters.

A first step in gaining more knowledge about what a construct is and what it is not, is to relate and distinguish it from other, seemingly related constructs and to make it measurable. Therefore, in Chapter 2, I start out with a theoretical conceptualization and empirical validation of perceived expertise affirmation at both the individual and team levels of analysis. I argue that perceived expertise affirmation is a multi-level construct that originates in team members' individual perceptions and materializes into a higher-level collective team construct: reciprocal expertise affirmation —i.e. the mutual recognition by team members that they respect, value, and affirm each other's expertise—. Moreover, I relate and distinguish perceived expertise affirmation and reciprocal expertise affirmation from seemingly related constructs at both the individual as well as the team level of analysis, respectively. I validate perceived expertise affirmation and reciprocal expertise affirmation by means of two confirmatory factor analyses in a field study among 155 white-collar workers in teams from organizations in The Netherlands from a wide variety of industry sectors.

In Chapter 3, I extend the insights from Chapter 2 and develop a multi-level model with correlates of perceived expertise affirmation in work teams using multi-source data from 86 organizational work teams of 400 white-collar workers and their supervisors. At the individual level of analysis, I expect that similarities in educational background and levels of relative expertise among team members positively predict individual perceived expertise affirmation. Moreover, I expect that perceived expertise affirmation and reciprocal expertise affirmation both positively predict supervisor-rated individual performance. At the team level of analysis, I examine whether smaller teams and teams in which members have worked together for a longer period of time develop higher levels of reciprocal expertise affirmation. Moreover, I examine the team-level relationship between reciprocal expertise affirmation and team performance and propose that this relationship is moderated by sharedness of expertise perceptions.

In Chapter 4, I focus on the team level of analysis and examine how and when reciprocal expertise affirmation improves team performance. I replicate the findings as presented in Chapter 3 that reciprocal expertise affirmation is positively related to team performance, but only in teams with high levels of shared expertise perceptions. Moreover, I extend this model by proposing that the joint effects of teams' reciprocal expertise affirmation and sharedness of expertise perceptions on team performance will be mediated by coordinated action. Data from 226 members of 39 student teams, working on a realistic four-week business simulation, support these hypotheses.

Finally, in Chapter 5, I summarize and integrate the main findings of my dissertation. I discuss the strengths and limitations of the studies I conducted, and end with the theoretical and practical implications of the combined findings and with some suggestions for future research.

CHAPTER 2

PERCEIVED EXPERTISE AFFIRMATION IN WORK TEAMS: A MULTI-LEVEL CONSTRUCT VALIDATION STUDY

Introduction

Employees' belief that others recognize and acknowledge their task-related knowledge, skills, and abilities (henceforth perceived expertise affirmation) is a crucial determinant of their well-being and performance. For example, a large survey study among 8,000 American employees revealed that a lack of appreciation was the number three reason why they wanted to leave their current job (Malachowski, n.d.). Moreover, a recent poll by Kaisen Consulting Ltd. revealed that recognition was the number three motivator at work, whereas a lack of recognition was the number two demotivator (Robb & Myatt, n.d.). Also, a large Harris Poll already indicated in 2000 that out of the American employees who received a lot of appreciation for their work, 68% were very satisfied with their jobs versus only 13% of those who received little or no appreciation (Taylor, 2000).

Perceived expertise affirmation can be expected to be especially important in work teams because people are particularly sensitive to how they are viewed by others they depend on (see, for example, Stevens & Fiske, 2000). However, in spite of its relevance for organizations, and calls to examine the role of perceived expertise affirmation in work teams (MacPhail, Roloff, & Edmondson, 2009), little empirical research has addressed this topic. The goal of the current study is to introduce and clearly define perceived expertise affirmation, and to stimulate research in this area by developing and validating a measure of perceived expertise affirmation in work teams.

Because teams are social systems that are comprised of individual team members, it is likely that perceived expertise affirmation will not only play a role at the level of the individual team member, but also at the team level of analysis. Therefore, in this study, we use the multi-level framework for construct validation from Chen, Mathieu, and Bliese (2004). This framework consists of five consecutive steps that provide complementary evidence about the overall validity of a multi-level construct (see Chen et al., 2004 for a detailed description of each step). In the remainder of this chapter, we follow these five steps to determine the validity of perceived expertise affirmation. First, we define perceived expertise affirmation at the individual and team levels of analysis. Second, we specify how team-level expertise affirmation emerges

from its lower-level counterpart. Third, we test the psychometric properties of the construct at both levels of analysis. Fourth, we examine the extent to which perceived expertise affirmation varies at the individual and team levels of analysis. Fifth, we examine the relationship of the focal construct with theoretically related constructs at both levels of analysis. Steps 1 and 2 outlined above are theoretical in nature, while steps 3 through 5 comprise empirical testing. We conduct the required empirical tests in the latter steps on data from a survey study among 164 white-collar workers from teams from a variety of industry sectors.

Step 1: Construct definition

The individual-level construct: Perceived expertise affirmation

Because people have a fundamental need to feel recognized and respected by important others (e.g., Herzberg, Mausner, & Snyderman, 1959; Maslow, 1943), they continuously strive for affirmation of positive parts of their identity (Ashforth & Kreiner, 1999; Cornelissen, Haslam, & Balmer, 2007). Research has shown that people not only put a lot of time and effort into examining how others interact with them (King, Kaplan, & Zaccaro, 2008; Sheldon & Johnson, 1993), they even try to structure their social encounters in ways to receive affirmation from their interaction partners. For example, people tend to talk more with others who give them compliments than with those who treat them with disrespect (Jones, 1973). Also, people often engage in impression management to bring their qualities to the attention of others (for a review, see Schlenker, 2003). Ideally, this striving for affirmation results in the belief that others are aware of one's individual qualities. We refer to this state as perceived affirmation, and define it as an individual's belief that others recognize and acknowledge his or her positive characteristics.

Perceived affirmation is deemed important for a number of reasons. First of all, people who believe that they matter to important others experience a sense of relatedness and certainty about their position with regard to these others (Mak & Marshall, 2004). In contrast, believing to be disrespected or even rejected can cause anxiety (Baumeister & Tice, 1990), and even depression (Coie, Terry, Zakriski, & Lochman, 1995). Second, literature in the domain of sociometer theory (Leary & Baumeister, 2000) has proposed and provided evidence that people's belief that they are acknowledged by others positively affects their self-esteem (e.g., Denissen, Penke, Schmitt, & Van Aken, 2008). Third, research on pride has shown that people whose

performance is publicly and positively evaluated are more persistent in obtaining their goals (Williams & DeSteno, 2008). Finally, economic research has found that social approval can increase voluntary helping and stimulate cooperation within a team (Rand, Dreber, Ellingsen, Fudenberg, & Nowak, 2009). In short, perceived affirmation is an important motivational force.

There are several reasons why one would expect perceived affirmation to be especially important in work teams. Over the last decades, teams have become the building blocks of organizations and the most important groups employees belong to at work (Devine, Clayton, Philips, Dunford, & Melner, 1999). Because people's tendency to strive for affirmation is especially strong in groups that are important to them (e.g., Bernstein, Sacco, Young, Cook, & Hugenberg, 2010), the present study focuses on perceived affirmation in work teams. A second reason for this focus is that teams are characterized by interdependence between its members for fulfilling tasks and reaching goals (Kozlowski & Ilgen, 2006), and people are particularly motivated to be viewed positively by people they depend on (see, for example, Stevens & Fiske, 2000).

Perceived affirmation may refer to all kinds of individual qualities such as social skills, overall intelligence, creativity, and sport skills (Pelham & Swann, 1989). In the current study, we focus on perceived affirmation of *expertise* for two reasons. First, expertise –i.e. an individual's extensive knowledge or ability based on research, experience, or occupation in a particular area of study (Ericsson, 1996) – is the most important cognitive resource of a team (Faraj & Sproull, 2000). That is, the basic idea behind the increasing use of work teams in organizations is that teams facilitate the combination and integration of the expertise of the individual members. As a result, teams may perform more complex tasks, find more creative solutions, and make better decisions than the same number of individual employees on their own (Faraj & Sproull, 2000). As such, team members' expertise tends to have a strong impact on task-related team processes (Jehn, Northcraft, & Neale, 1999). Second, expertise is a positively valued individual characteristic that incorporates team members' individual strengths, talents, and skills that not only determine their potential contribution to the collective team product but also part of their work identity (cf. Van der Vegt, Van de Vliert, & Oosterhof, 2003).

We define perceived expertise affirmation as an individual team member's belief about the extent to which fellow team members recognize and acknowledge his or her

expertise. Perceived expertise affirmation is an individual cognitive variable that may vary among individuals, just like other cognitive variables such as need for cognition (Cacioppo & Petty, 1982), or self-efficacy (Bandura, 1977). That is, individual team members may differ in the extent to which they believe that fellow team members affirm their expertise. Research suggests that individual traits may partly determine how people think others see them. For example, individuals with a high level of global self-esteem tend to be more positive about how they think others see them in general (Back, Krause, Hirschmüller, Stopfer, Egloff, & Schmukle, 2009). Also, situational factors such as the frequency of interaction between team members may affect how individual team members believe others see them, and therefore result in *intra*-team differences in perceived expertise affirmation.

The team-level construct: Reciprocal expertise affirmation

Even though perceived expertise affirmation originates as an individual team member's belief (or, more precisely, as a meta-belief, i.e. someone's perception of how others see him/her; Kenny, 1994), substantial differences in expertise affirmation beliefs can also emerge between teams as a whole. The most important reason is that, just like individuals, teams vary on a number of characteristics that may result in *inter*-team differences in collective beliefs. Research has shown that a team's collective belief is the result of members' common exposure to similar situations, and prior performance (Bandura, 1993) as well as comparisons and discussions about team outcomes (Lindsley, Brass, & Thomas, 1995). For example, teams may differ in how often they engage in team activities such as team meetings, discussions, or lunches together. Such team activities enable members to display their abilities, skills, and knowledge in front of the rest of the team, and to observe fellow members' behavior and performance in different settings. Since research suggests that deep-level information (such as expertise) only becomes available over time through verbal and non-verbal interaction (cf. Harrison, Price, & Bell, 1998), it is likely that teams that spend more time on joint team activities develop higher levels of perceived expertise affirmation than teams that rarely engage in such activities.

We follow MacPhail et al. (2009), and refer to this team-level concept as *reciprocal expertise affirmation.* Reciprocal expertise affirmation is defined as team members' collective belief that their expertise is recognized and acknowledged by their fellow team members. Thus, whereas perceived expertise affirmation is an individual

belief about the extent to which fellow members recognize and acknowledge one's expertise, reciprocal expertise affirmation refers to a team's collective belief with the same content. The criteria that have to be met before one can speak about a collective belief will be discussed later (cf. Dansereau & Yammarino, 2000). For now, we simply want to make the point that it is likely that within teams collective expertise affirmation beliefs may evolve because individuals interact and start to converge in their perceptions, resulting in differences between teams.

Based on the above, we argue that perceived expertise affirmation and reciprocal expertise affirmation are two distinct constructs and that differences in expertise affirmation beliefs may exist both within teams and between teams. We now continue with discussing the emergence of reciprocal expertise affirmation to the team level from the individual measure of perceived expertise affirmation.

Step 2: Articulation of the nature of the aggregate construct.

We conceive perceived expertise affirmation as a one-dimensional concept that can be measured in a straightforward way by asking team members questions such as "*The other team members know in detail what I know and what I am capable of*". We assess reciprocal expertise affirmation with the same scale, but aggregated to the team level of analysis because, except for the level of analysis, both constructs derive from individual team members' expertise affirmation beliefs. In more statistical terms, we use a consensus model (Chen et al., 2004) to operationalize reciprocal expertise affirmation. This is the most common type of aggregation in organizational research and consists of calculating the team mean of the individual team members' ratings. Preconditions for using this aggregate in order to represent a collective belief are sufficient agreement between the team members with regard to expertise affirmation beliefs, as well as significant between-team variance (James, Demaree, & Wolf, 1984; Kozlowski & Klein, 2000). These preconditions will be tested and reported in the results section. However, before reporting the empirical evidence, we start with discussing steps 3 through 5 of Chen's (2004) framework of multi-level construct validation.

Step 3: Psychometric properties of the construct across levels of analysis

Step 3 is devoted to the factor structure, agreement, and reliability of the proposed construct. The required tests differ depending on the type of construct under examination. In the following, we discuss the psychometric evidence needed for a consensus model.

First, the factor structure of the multi-level construct should be identical across levels of analysis and correspond to the anticipated number of dimensions (Chen et al., 2004). Because we conceptualized perceived expertise affirmation as a one-dimensional cognitive construct at both the individual and team levels of analysis, it is sufficient to demonstrate this one-dimensionality at both levels of analysis with separate factor analyses (cf. Chen et al., 2004).

Second, if one adopts a consensus model to operationalize a team-level construct, it is crucial to examine whether individual perceptions converge within teams. The most common way to do that is by calculating the inter-rater agreement index (R_{wg}) developed by James et al. (1984). This measure indicates whether the variability of members' responses within a team is smaller (more agreement) than one would expect by chance alone. The value for the aggregate construct should be equal to .70 or higher in order to justify aggregation of the individual ratings to represent a team-level construct (cf. James et al., 1984).

Third, the reliability of the measure needs to be adequate at both the individual and the team levels of analysis. In the case of a consensus model, it is important to note that the internal consistencies may differ depending on the inter-correlation matrices used. That is, in our case, one should not only compute Cronbach's alpha for the scale at the individual level of analysis, but also at the team level of analysis. Moreover, all internal consistency values should exceed the .70 threshold that Hinkin (1998) has recommended for a new measure (p. 113). The empirical results for the factor, R_{wg}, and reliability analyses for the scale we developed will be reported in the results section.

Step 4: Construct variability across levels of analysis

The purpose of the fourth step of the validation process is to ensure that the measures of the multi-level construct vary sufficiently within and between units of analysis (in our case work teams). The most commonly used indices to examine this are intra-class correlations (ICCs; cf. Dansereau & Yammarino, 2000). ICC(1) indicates which proportion of the variance in individuals' scores is accounted for by team membership, or the degree to which within-team variance is small relative to the between-teams variance. ICC(2) is a figure that evaluates the reliability of the group means (Bliese, 2000). We report these scores for our focal construct in the results section.

Step 5: Construct function across levels of analysis

Chen et al. (2004) argue that the best way to clarify the meaning of a multi-level construct is by discussing and examining its differences and similarities with other constructs at the relevant levels of analysis. In the present chapter, we aim to provide some initial content validation, and compare our focal construct to two related but distinct concepts at each level of analyses. Later, in the results section, we present the corresponding empirical results. At the individual level of analysis we contrast perceived expertise affirmation to self-efficacy and team-based self-esteem. At the team level of analysis, we compare reciprocal expertise affirmation to psychological safety and credibility.

Perceived expertise affirmation and related constructs

We chose *self-efficacy* (Bandura, 1977), and *team-based self-esteem* (Ellemers, Kortekaas, & Ouwerkerk, 1999) because, just like perceived expertise affirmation, self-efficacy and team-based self-esteem are both individual-level cognitive constructs with positive motivating potential (Bandura, 1977; Ellemers et al., 1999). *Self-efficacy* refers to people's belief in their individual ability to succeed in specific situations or to fulfill specific tasks (Bandura, 1977), and can be considered as a person's expectation of his or her chances to successfully accomplish a given task. It is generally seen as an individual's belief in his or her capability to perform a specific task at a specific level of performance.

Similar to perceived expertise affirmation, self-efficacy is task-related, and concerned with someone's skills, abilities, and knowledge. Because self-efficacy is someone's judgment of whether or not s/he is capable to perform a certain task, it has a rather inward-focused orientation (toward oneself and the task). This means that even if someone would be alone in the world, this individual could still have a belief about how capable s/he is at performing a certain task (e.g., "I am able to build this fence").

In contrast to self-efficacy, perceived expertise affirmation has a more outward orientation. That is, perceived expertise affirmation is not a belief about one's own capabilities to do something, but about how one believes to be seen by <u>others</u> (e.g., "I think others think I can build this fence"). This presupposes the existence of and contact with others. Moreover, self-efficacy and perceived expertise affirmation can vary independently. For example, John may think that he is very competent at fulfilling the task of a receptionist (high self-efficacy), but at the same time believe that none of his

fellow team members from the front-office is aware of this expertise (low perceived expertise affirmation). In short, self-efficacy is concerned with how John *evaluates his own* expertise, whereas perceived expertise affirmation focuses on how John *thinks others evaluate his* expertise.

We expect both self-efficacy and perceived expertise affirmation to be motivational forces, albeit through different mechanism. According to Bandura (1993), self-efficacy affects the levels at which people set their goals, the strength of their commitment to them, and the strategies people use to obtain them. From research on goal setting, it is known that these factors increase intrinsic motivation (Locke & Latham, 1990). Also, self-efficacy has been shown to directly enhance task performance which, in itself, can function as a motivator (Lindsley et al., 1995; Sadri & Robertson, 1993). In contrast to self-efficacy, the expected motivational force behind perceived expertise affirmation is not based on goal-setting mechanisms but is rather of a social nature. That is, perceived expertise affirmation signals to team members that they are respected by the other members of the team (cf. Tyler & Blader, 2003), fulfilling a fundamental need to feel estimated and recognized by important others (e.g., Herzberg et al., 1959; Maslow, 1943). Because of the strong motivational force of psychological need satisfaction (cf. the self-determination literature; Baard, Deci, & Ryan, 2004), we expect that perceived expertise affirmation will motivate people through this social mechanism.

Team-based self-esteem is directly derived from the construct of organization-based self-esteem, which refers to the degree to which an individual believes him/herself to be capable, significant, and worthy as an organizational member (Pierce & Gardner, 2004). In contrast to organization-based self-esteem, team-based self-esteem is focused on team instead of organizational membership. Team-based self-esteem thus reflects the extent to which an individual thinks he or she is capable, significant, and worthy as a team member.

Similar to perceived expertise affirmation, team-based self-esteem refers to an evaluation of one's value derived from an aspect of their social identity (e.g., Tajfel & Turner, 1986). In this case, it is that part of a team member's social identity that derives from the value connotation attached to the membership of this particular team (Ellemers et al., 1999) (e.g., "I really matter in this team").

In contrast to perceived expertise affirmation, team-based self-esteem is not necessarily task-related, but broader and may be related to all kinds of aspects. For example, John can have little task expertise, but may still feel that he is very important for the team because he is able to create a good atmosphere within the team because of his great sense of humor. Irrespective of his expertise, he may, therefore, think he fulfills an important role within the team, and, as a result, score high on team-based self-esteem.

A second difference is that team-based self-esteem regards someone's *self-evaluation* (Pierce & Gardner, 2004), whereas perceived expertise affirmation is someone's belief about how *others evaluate him or her.* Finally, perceived expertise affirmation is more cognitive in nature ("I think others have an accurate view of what I know") while team-based self-esteem is more affective in nature ("I really feel that I fit well in this team"). Because of these differences, perceived expertise affirmation and team-based self-esteem may vary independently. That is, Sarah may think their fellow members are unaware of her expertise, but at the same time may feel that she fulfills an important role in her team.

Similar to perceived expertise affirmation and self-efficacy, team-based self-esteem also has a potential motivational effect on team members. For example, research has shown that people who score high on *organization*-based self-esteem tend to show high levels of commitment, like their work, and perform well (see Pierce & Gardner [2004] for an overview). Because a team is the most important group employees belong to at work, one would expect the same, or even stronger results for *team*-based self-esteem. Second, the social identity literature argues that team-based self-esteem makes team members feel more included and, in turn, more inclined to work hard for their team (see Ellemers et al., 1999; Tajfel & Turner, 1986). In short, the motivational mechanism of perceived expertise affirmation seems more similar to that of team-based self-esteem than that of self-efficacy in the sense that it is more of a social nature than related to goal setting.

Reciprocal expertise affirmation and related constructs

At the team level of analysis, we relate reciprocal expertise affirmation to *psychological safety* and *credibility* because, similar to reciprocal expertise affirmation, these are both team-level collective beliefs that have been related to effective team functioning (Edmondson, 1999; Lewis, 2003).

Psychological safety is defined as a collective belief among team members that they will not be harmed if they make or report mistakes, ask for advice or seek feedback (Edmondson, 1999). It refers to how team members think fellow members will react if they act visibly within the team (e.g., asking a question or proposing a new idea in a meeting). Similar to reciprocal expertise affirmation, psychological safety is a collective belief that may differ between teams. That is, over time, team members start to converge in their perceptions and develop shared beliefs about how things are in their team. For example, asking feedback about a medical mistake might be unthinkable in one surgical team but considered normal behavior in another team due to the differences between those teams in their beliefs about probable interpersonal consequences (cf. Edmondson, 1999).

Reciprocal expertise affirmation and psychological safety differ with regard to the content of the collective belief. First, reciprocal expertise affirmation is focused on the evaluation of an individual *characteristic* (expertise), whereas psychological safety focuses on the evaluation of the acceptability of specific *behavior* in this team (e.g., asking for help, admitting errors, seeking feedback; Edmondson, 1999). Second, in contrast to reciprocal expertise affirmation, psychological safety regards beliefs about the absence or presence of fear which represents a strong, negative emotion (Öhman, 2000). Third, psychological safety is more avoidance-oriented (i.e. focused on protecting oneself from harm), whereas perceived expertise affirmation is more approach-oriented (i.e. focused on obtaining approval or respect from others).

As a result, reciprocal expertise affirmation and psychological safety can differ independently. Team members may believe that they can express themselves within their team without any repercussions (high level of psychological safety), but at the same time believe that fellow members are not aware of their expertise (low level of reciprocal expertise affirmation). The opposite is also possible. For example, team members may think that their expertise is recognized and acknowledged by the team (high level of reciprocal expertise affirmation), but also believe that, as soon as they make a mistake this will be held against them (low level of psychological safety).

Both psychological safety and reciprocal expertise affirmation have been identified as motivators for team members to share and integrate their expertise with their fellow members, and, therefore, have been related to team performance (Edmondson, 1999; MacPhail et al., 2009). However, the underlying motivating drivers

are likely to differ because approach and avoidance forms of motivational regulation activate diametrically divergent sets of intrinsic motivation processes (cf. Elliott & Harackiewicz, 1996). Approach goals, such as striving for affirmation, tend to generate excitement whereas avoidance goals, such as not making mistakes, trigger inhibition (Elliott & Harackiewicz, 1996). We would expect that reciprocal expertise affirmation creates an approach orientation and activates knowledge sharing and integration, as well as team learning. In contrast, psychological safety reduces team members' avoidance to discuss their mistakes or creative ideas within the team. For these reasons we expect both psychological safety and reciprocal expertise affirmation to increase team performance, but for different reasons (less inhibition versus more activation, respectively).

Credibility is a component of a team's transactive memory (i.e. a cognitive system that combines the knowledge possessed by each individual with a shared and accurate awareness of who knows what; Wegner, 1986). Credibility reflects the extent to which the team members believe that the relevant task knowledge possessed by any of the other team members is correct (Lewis, 2003). In sum, credibility is the extent to which team members have confidence in each other's expertise and relevant task knowledge.

Similar to reciprocal expertise affirmation, credibility is a collective belief that focuses on team members' expertise. However, while reciprocal expertise affirmation refers to team members' beliefs about how their expertise is evaluated by their fellow team members (meta-perception), credibility refers to how team members evaluate their fellow team members' expertise (perception). As a result, they can vary independently. For example, within a team everyone may believe that fellow members affirm their expertise (high level of reciprocal expertise affirmation), whereas in reality team members do not trust the expertise of the other members at all (low level of credibility). The other way around is also possible, that is, team members may have a collective belief that their expertise is not affirmed (low level of reciprocal expertise affirmation), while in reality everyone relies without hesitance on the expertise and information of their fellow members (high level of credibility).

Even though reciprocal expertise affirmation and credibility have both been theoretically related to team performance, the mechanisms through which they are expected to increase team performance differ. MacPhail et al. (2009) argue that reciprocal expertise affirmation motivates team members to share and integrate their

expertise with their fellow members, which increases team performance. On the other hand, the literature relates the effects of credibility more to a clearer division of labor than to increases in motivation (cf. Lewis, 2003; Wegner, 1986). That is, if team members believe that the task knowledge from their fellow team members is credible this allows them to focus on their own task with fewer distractions, and without the need to double check information and work from others. This may lead to higher levels of efficiency and, as a result, increased levels of individual and team task performance (Wegner, 1986).

Before we continue with the empirical tests required in steps 3 through 5, we describe the sample, procedure, and measures we used to collect the data on which we ran our empirical validation analyses.

Method

Sample and data collection procedures

In order to validate our measures of perceived expertise affirmation and reciprocal expertise affirmation, we conducted a survey study in a sample of 155 white-collar employees from organizations in The Netherlands from a wide variety of industry sectors. Of these employees 22% worked in the health sector, 18.5% worked for financial institutions, 18.5% for the government, 11% in education, 7% in retail, 7% in the construction industry, 7% in service organizations, 4% in culture, and 4% in transport.

During a meeting with the supervisors of the participating teams, we collected general information, such as team size and the type of work performed by the teams. Two weeks later we distributed a survey among all the team members in which we asked questions related to our study variables. We distributed and gathered all questionnaires in person in order to obtain a good response rate. In addition, we explained that the data would be treated confidentially.

Out of the initial 164 team members, 155 respondents returned the survey (a 94.5% response rate). Team members' ages ranged from 17 to 72 (M=39, SD=12.56). Their average number of months in their organization, position, and team were 130, 94, and 49, respectively. Of the 155 respondents, 52 % were male. The size of the 27 teams in our sample ranged from 4 to 11 (M=6.07, SD=1.88). In 18 of these returned questionnaires there were missing values, resulting in a complete dataset for 137 respondents.

Individual-level measures

Perceived expertise affirmation. Because an instrument to assess perceived expertise affirmation did not yet exist we had to develop a new scale. In order to create a valid measure of a construct it is important to start with a clear and precise conceptualization of the construct and its theoretical context, as we did above. For the development of our initial item pool we used Kenny's (1994) work about meta-perception as a theoretical basis. Next, we spent ample time on developing items that reflect expertise affirmation beliefs. The initial item pool consisted of six items, which we consider sufficient given the narrow and specific content area of our core construct. These six items read: "The other team members are aware of my team-relevant skills", "The other team members are aware of my capabilities", "The other team members have an accurate view of my capabilities", "The other team members are aware of my team-relevant knowledge", "The other team members are aware of what I know", and "The other team members have detailed knowledge about my knowledge and capabilities".

For the next step in the scale development process, Chen et al. (2004) recommend using subject matter experts to verify whether these items sufficiently and accurately capture the intended construct. Five subject matter experts independently judged the items on their face validity and their content validity. Based on their comments, the two items "The other team members are aware of my team-relevant skills" and "The other team members are aware of my capabilities" were rephrased into one new item as follows, "The other team members are precisely aware of my knowledge and expertise". Also, the two items: "The other team members are aware of my team-relevant knowledge", and "The other team members are aware of what I know", were rephrased and combined in one item: "The other team members have an accurate view of what I know".

In a second round the same five subject matter experts reached consensus on using the following three items as indicators of perceived expertise affirmation. "The other team members are precisely aware of my knowledge and expertise", "The other team members know in detail what I know and what I am capable of", and "The other team members have an accurate view of what I know". Therefore, these three items were put in the questionnaire to assess team members' expertise affirmation beliefs. We decided to use a response scale ranging from 1 ("completely disagree") to 5

("completely agree") for all scales. Reliability and factor structure details for this scale are presented in the results section.

Self-efficacy. We measured self-efficacy with three items from Spreitzer (1995): "I am confident about my ability to do my job", "I am self-assured about my capabilities to perform my work", and "I have mastered the skills necessary for my job". Cronbach's alpha for this scale was .89.

Team-based self-esteem. We measured team-based self-esteem with four items adapted from Ellemers et al. (1999): "I really feel that I fit well in this team", "The other team members have faith in my competence", "I really matter in this team", and "I am generally satisfied about my role in this team". Because of the conceptual overlap of the item "The other team members have faith in my competence" with perceived expertise affirmation we ran all analyses twice, once with and once without this item. Excluding this item from the team-based self-esteem scale decreased the Cronbach's alpha from .88 to .86.

Team-level measures

Reciprocal expertise affirmation. Reciprocal expertise affirmation was measured with the same scale as perceived expertise affirmation and subsequently aggregated to the team level of analysis. Reliability, factor structure, and aggregation details for this scale are presented in the results section.

Credibility. Credibility was measured using four items from Lewis (2003). The items were: "The members of this team trust that other members' knowledge is credible", "The members of this team confidently rely on the information other people bring into the discussion", "When other team members give information, I want to double-check it for myself" (reversed), and "The members of this team do not have much faith in other members' expertise" (reversed). The team-level Cronbach's alpha of this scale was .86. The mean R_{wg} value for credibility was .87 (James et al., 1984). Further, one-way analyses of variance showed that perceptions of credibility differed significantly between teams. $F(26, 110)=2.51$, $p<.01$). The ICC(1) value of .21 indicated that a significant proportion of the total variance was accounted for by team membership. ICC(2) was .60. Together, these statistics suggested that aggregating individual perceptions of credibility to reflect team-level credibility was justified.

Psychological safety. Psychological safety was measured using the seven-item scale from Edmondson (1999). The items read as follows "If you make a mistake in this

team, it is often held against you" (reversed), "Members of this team are able to bring up problems and tough issues", "People on this team sometimes reject others for being different"(reversed), "It is safe to take a risk on this team", "It is difficult to ask other members of this team for help"(reversed), "No one on this team would deliberately act in a way that undermines my efforts", and "Working with members of this team, means that my unique skills and talents are valued and utilized". However, because of the conceptual overlap of the latter psychological safety item and the three expertise affirmation items, we ran all analyses twice, once with and once without this item. Excluding this item from the scale reduced the team-level Cronbach's alpha from .75 to .72. The mean R_{wg} value (James et al., 1984) for psychological safety was .79, and, one-way analyses of variance showed that perceptions of psychological safety differed significantly between teams $F(26, 110)=3.20$, $p<.01$). The ICC(1) value of .28 indicated that a significant proportion of the total variance was accounted for by team membership. ICC(2) was .69. After excluding the item the results remained similar, that is, ($F(26, 110)=3.10$, $p<.01$). ICC(1)=27; ICC(2)=.68, and showed that with or without this item, aggregation of psychological safety to the team level of analysis was allowed.

Results

Psychometric properties of the construct across levels of analysis

In step 3, using the above-mentioned data, we examined the factor structure, reliability, and inter-member agreement of our perceived expertise affirmation and reciprocal expertise affirmation measures.

Factor structure

In order to test the convergent validity of the three items at both levels of analysis and to establish the structural equivalence between the two constructs, we performed a multi-level factor analysis. We deliberately chose to do a multi-level factor analysis, because we used the same items to assess the construct at multiple levels of analysis (cf. Chen et al., 2004). We conducted exploratory rather than confirmatory multi-level factor analyses because we were interested in the identification of the underlying factor structure without any a priori restrictions. To that end, we followed the procedure outlined by Van de Vijver and Poortinga (2001) and ran two separate exploratory factor analyses. The first exploratory factor analysis was at the individual level of analysis and was performed using the team mean-centered individual scores, whereas the second exploratory factor analysis was conducted using the items' team

means (cf. Van de Vijver & Poortinga, 2001). The results of these exploratory factor analyses are presented in Table 2.1.

As expected, only one component was extracted at both levels of analysis, and each item showed very high factor loadings. The percentage of explained variance by this factor was 81.54% at the individual level of analysis and 89.91% at the team level of analysis. These results provide evidence for the one-dimensionality of the construct. Finally, we evaluated the factorial agreement of the pooled-within structure and the pooled-between structure by calculating a congruence coefficient, Kendall's tau, between the individual and group-level factor loadings. This correspondence measure among the individual and group-level factor was 1 (p<.01), showing that, as required for this type of multi-level construct, the one-factor structure was invariant across both levels of analysis (Van de Vijver & Poortinga, 2002).

Table 2.1

Results of exploratory multi-level factor analysis of perceived and reciprocal expertise affirmation: Loadings at the individual (within) and team (between) levels.

	Factor loadings	
Items	**Within**	**Between**
1 The other team members are precisely aware of my knowledge and expertise	.91	.95
2 The other team members know in detail what I know and what I am capable of	.88	.93
3 The other team members have an accurate view of what I know	.92	.96
% explained variance	81.54	89.91
Eigen value	2.45	2.70

Reliability and inter-member agreement

The internal consistency reliability (Cronbach's alpha) was .85 for the perceived expertise affirmation scale and .94 for the team-level reciprocal expertise affirmation scale. Both are well above the .70 threshold that Hinkin (1998) has recommended for a

new measure (p. 113). The mean R_{wg} value for reciprocal expertise affirmation was .75 (James et al., 1984) which showed sufficient within-team agreement.

Construct variability across levels of analysis

Step 4 of the validation process is to ensure that measures of the multi-level construct vary appropriately at both levels of analysis. A one-way analysis of variance showed that expertise affirmation beliefs differed significantly between teams, $F(26, 110)=1.69$, $p <.05$). The ICC(1) value of .12 indicated that a significant proportion of the total variance was accounted for by team membership. ICC(2) was .41. Even though these statistics suggested that aggregating individual perceived expertise affirmation to reflect team-level reciprocal expertise affirmation was justified (cf. Bliese, 2000), the mean squares reveal that there was not only an important amount of variance *between* the teams (MS=.74) but also *within* the teams (MS=.44). This suggests that it is not only theoretically but also empirically meaningful to distinguish between reciprocal expertise affirmation and perceived expertise affirmation.

Construct function across levels of analysis

Individual-level confirmatory factor analysis

Table 2.2 presents the inter-item correlations of the three individual-level constructs under scrutiny. Normally, correlations at the individual level of analysis need to be interpreted with caution when working with nested data (individuals within teams [cf. Snijders & Bosker, 1999]). In order to take into account this nesting, we used the WABA-procedure from Dansereau & Yammarino (2000) that Chen et al. (2004) recommend, and subtracted the team means from the individual scores before calculating the individual-level inter-correlations.

From Table 2.2 it can be seen that the items of self-efficacy and perceived expertise affirmation were most highly correlated to items from their own respective scales, but that this was not the case for the item "The other team members have faith in my competence" from the team-based self-esteem scale (see item TBSE2 in Table 2.2). As expected, this item was highly correlated with the three perceived expertise affirmation items. Because of this conceptual overlap and the high inter-correlations with the items of perceived expertise affirmation, we excluded this item from all further

analyses[1]. Even though there was also some conceptual overlap between the team-based self-esteem item "I really matter to this team" (item TBSE3 in Table 2.2) and the perceived expertise affirmation items, this item does not specifically refer to expertise. Moreover, the inter-correlations were smaller than those of the item mentioned above. Therefore, we decided not to exclude this item from the scale.

We conducted a confirmatory factor analysis to assess the discriminant and convergent validity of the items measuring self-efficacy, perceived expertise affirmation, and team-based self-esteem with the LISREL 8.80 computer package, using the maximum likelihood method. Because for the individual-level constructs we were only interested in the within-team variance, we subtracted the team means from the individual team members' scores to remove the between-team variance (cf. Van de Vijver & Poortinga, 2002). We, first, tested our hypothesized model in which self-efficacy, perceived expertise affirmation, and team-based self-esteem items loaded on three corresponding latent constructs. The overall fit of the model to the data was good ($\chi 2=40.22$, df=24, $p=.02$). The comparative fit index (CFI) was .98, the Tucker-Lewis index (TLI) was .96, and the root mean square error of approximation (RMSEA) was .07. Moreover, the factor loading of each item with its corresponding latent construct was significant at the .05 level or better.

Next, we computed three alternative models. In the first alternative model, the team-based self-esteem, and perceived expertise affirmation items loaded all on one latent construct, and the self-efficacy items loaded on a separate latent construct. The fit of this model was significantly worse than that of the hypothesized measurement model ($\Delta\chi^2$ (2)=113.70, $p<.001$), and fit indices for this model were less adequate (CFI=.87; TLI=.82; RMSEA=.19). In the second alternative model, all self-efficacy and perceived expertise affirmation items loaded on one latent construct, and team-based self-esteem items loaded on a separate latent construct. The fit of this model was so bad that the model did not even converge. The third alternative model contained only one latent variable. Again, the fit of this model was significantly worse than that of the original model ($\Delta\chi^2$ [3]=281.10, $p<.0001$; CFI=.69; TLI=.58; RMSEA=.28).

In sum, based on these outcomes we concluded that, as predicted, the hypothesized three- factor measurement model was the most appropriate for the data

[1] The results for both the individual as well as the team-level CFA with the original scales were highly similar to those with the excluded items, and lead to the same conclusions regarding the validity of our focal constructs. Details can be obtained from the author.

under consideration, providing evidence that perceived expertise affirmation, self-efficacy, and team-based self-esteem are related but distinct constructs.

This conclusion is consistent with the pattern of inter-correlations presented in Table 2.3. Table 2.3 displays the means, standard deviations (SD), and zero-order Pearson correlations among all the study variables at the individual as well as the team level of analysis. As expected, at the individual level of analysis perceived expertise affirmation was moderately and positively related to both self-efficacy (r=.42, p <.01), and team-based self-esteem (r=.54, p<.01). The correlation between self-efficacy and team-based self-esteem was also positive, but somewhat lower (r=.35, p <.01).

Team-level confirmatory factor analysis

Table 2.4 presents the inter-item Pearson correlations between the three team-level constructs under scrutiny. From Table 2.4 it can be seen that the items of credibility and reciprocal expertise affirmation were most highly correlated to items from their own respective scales, but that this was not the case for the item "Working with members of this team, means that my unique skills and talents are valued and utilized" from the psychological safety scale. As expected, this item was highly correlated with the three expertise affirmation items (see item PS7 in Table 2.4). Because of this conceptual overlap, and the high inter-correlations with the items of reciprocal expertise affirmation, we excluded this item from all further analyses.

We conducted a second confirmatory factor analysis to assess the discriminant and convergent validity of credibility, psychological safety, and reciprocal expertise affirmation. Although the sample size at the team level of analysis was relatively small, a simulation study from Gagné & Hancock (2006) regarding CFA and sample size has shown that *if* the model converges *and* the construct reliabilities are high, estimates are very likely to be reliable.

We first tested our hypothesized model in which the credibility, psychological safety, and reciprocal expertise affirmation items loaded on three corresponding latent constructs. The overall fit of this model to the data was reasonable (χ2=75.17, df=62, *n.s.*; CFI=.89; TLI=.86; RMSEA=.09). Moreover, the factor loadings of the items of reciprocal expertise affirmation and credibility with their corresponding latent construct were all significant at the .05 level or better. However, this was not the case for three psychological safety items "If you make a mistake in this team, it is often held against you" (reversed), "People on this team sometimes reject others for being

different" (reversed), and "No one on this team would deliberately act in a way that undermines my efforts" (items PS1, PS3, and PS6, respectively, in Table 2.4). We will come back to this point in the discussion section.

To further evaluate the discriminant validity of our scales we computed three alternative models. In the first model, all credibility and reciprocal expertise affirmation items loaded on one latent construct and the psychological safety items loaded on a separate latent construct. The fit of this model was significantly worse than that of the hypothesized measurement model ($\Delta\chi^2$ [2]=65.31, p<.001). Fit indices for this model were CFI=.77; TLI=.72; RMSEA=.21. In the second model, all psychological safety items and reciprocal expertise affirmation items loaded on one latent construct, and credibility loaded on a separate latent construct. The fit of this model was also significantly worse than that of the hypothesized measurement model ($\Delta\chi^2$ [2]=53.17, p <.001; CFI=.76; TLI=.71; RMSEA=.20). The third model contained only one latent variable. Again, the fit of this model was significantly worse than that of the original model ($\Delta\chi^2$[3]=57.07, p<.001; CFI=.70; TLI=.64; RMSEA=.20).

In short, based on these outcomes we conclude that, as expected, our three-factor measurement model was the most appropriate for the data under consideration, providing evidence that reciprocal expertise affirmation, psychological safety, and credibility are related but distinct constructs.

This is also consistent with the inter-correlations between the team-level variables (see Table 2.3). At the team level of analysis reciprocal expertise affirmation is positively related to credibility (r=.51, p<.01) but not significantly to psychological safety (r=.26, *n.s.*). Moreover, psychological safety and credibility are highly and positively correlated (r=.71, p<.01).

Table 2.2

Individual-level Pearson correlations of the items of self-efficacy (SE), team-based self-esteem (TBSE), and perceived expertise affirmation (PEA).[a]

Item	**1**		**2**		**3**		**4**		**5**		**6**		**7**		**8**		**9**	
1 SE1																		
2 SE2	.69	**																
3 SE3	.63	**	.82	**														
4 TBSE1	.20	*	.20	*	.23	**												
5 TBSE2[b]	.23	**	.23	**	.25	**	.58	**										
6 TBSE3	.20	*	.26	**	.26	**	.65	**	.70	**								
7 TBSE4	.18	*	.14		.15		.60	**	.47	**	.69	**						
8 PEA1	.29	**	.30	**	.40	**	.36	**	.44	**	.48	**	.39	**				
9 PEA2	.38	**	.31	**	.36	**	.35	**	.44	**	.53	**	.34	**	.69	**		
10 PEA3	.31	**	.25	**	.27	**	.37	**	.60	**	.59	**	.37	**	.77	**	.70	**

** Correlation is significant at the 0.01 level (n=137 team members)

* Correlation is significant at the 0.05 level

[a] Calculations were based on the individual scores minus the team means

[b] Item excluded from further analyses

Table 2.3

Individual and team-level univariate descriptives and Pearson correlations[a].

Variables	M	SD	1	2	3	4	5	M	SD
1 Self-efficacy	4.25	.57		.49 *	.41 *	.33	.39 *	4.25	.30
2 Team-based self-esteem	3.98	.65	.35 **		.53 **	.65 **	.63 **	4.00	.39
3 Expertise affirmation	3.54	.71	.42 **	.54 **		.26	.51 **	3.57	.42
4 Psychological safety	3.96	.56	.15	.44 **	.23 *		.71 **	3.97	.36
5 Credibility	4.21	.58	.32 **	.45 *	.35 **	.63 **		4.22	.37

** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

[a] Correlations in the lower triangle are at the individual level of analysis (n=137) (based on the individual scores minus the team means), whereas correlations in the right triangle are at the team level of analysis (n=27).

Table 2.4

Team-level correlations of the items of psychological safety (PS), reciprocal expertise affirmation (REA), and credibility (CRE).

Item	1	2	3	4	5	6	7	8	9	10	11	12	13
1 PS1													
2 PS2	.14												
3 PS3	-.14	.59 **											
4 PS4	.38 *	.44 *	.01										
5 PS5	.39 *	.53 **	.20	.70 **									
6 PS6	.28	.57 **	.20	.27	.15								
7 PS7[a]	.10	.69 **	.36	.29	.45 *	.21							
8 CRE1	.25	.64 **	.47 *	.45 *	.49 **	.48 *	.62 **						
9 CRE2	.18	.62 **	.45 *	.49 **	.54 **	.48 *	.54 **	.78 **					
10CRE3	-.11	.49 **	.54 **	.29	.40 *	.31	.48 *	.67 **	.57 **				
11CRE4	.08	.58 **	.47 *	.40 *	.55 **	.22	.56 **	.54 **	.50 **	.68 **			
12REA1	-.23	.45 *	.30	.30	.33	-.03	.71 **	.43 *	.41 *	.42 *	.48 *		
13REA2	-.20	.41 *	.31	.20	.31	.01	.60 **	.38	.34	.44 *	.41 *	.81 **	
14REA3	-.26	.40 *	.22	.26	.27	.16	.65 **	.35	.33	.47 *	.40 *	.89 **	.85 **

** Correlation is significant at the 0.01 level (n=27 teams)

* Correlation is significant at the 0.05 level

[a] Item excluded from further analyses

Discussion

In spite of the fact that perceived expertise affirmation has been identified as a strong motivational force in teams (MacPhail et al., 2009) research on this construct is scarce. The aim of the present chapter was to take a first step in the conceptualization and empirical validation of this construct. Using Chen et al.'s (2004) framework for multi-level construct validation, our results showed that, as expected, the individual team members' perceptions of expertise affirmation materialize into a team-level property, which we refer to as reciprocal expertise affirmation (MacPhail et al., 2009). Moreover, in this chapter, we provided evidence that perceived expertise affirmation and reciprocal expertise affirmation are unique constructs that can be theoretically and empirically distinguished from seemingly related constructs at the individual and team levels of analysis.

Theoretical implications

The findings in this chapter make two important contributions to the teamwork literature. First, this study answers calls from MacPhail et al. (2009) and other scholars for research into affirmation of important positive characteristics of people's identity at work (see, for example, also, Dutton, Roberts, & Bednar, 2010). This stream of research builds on fundamental social psychological work that underscores the importance of the construction and maintenance of a positive identity at work and its potential implications for motivation. The first step in setting up research in a specific domain is to make it measurable. In this study, we have developed and validated a scale that may stimulate research examining the importance of perceived expertise affirmation at work.

Second, the study in this chapter responds to recent calls for a multi-level approach to the study of identities at work (Ashforth, Rogers, & Corley, 2011). Most research on organization-based identities focuses on a single level of analysis, typically the individual, group, or organizational-level, whereas in order to truly understand the organization as a system of interacting identities, it must be examined at all relevant levels of analysis (Ashforth et al., 2011; Kozlowski & Klein, 2000). This study showed that for expertise affirmation beliefs at least two levels of analysis matter: the individual and the team level of analysis. Not only do individual employees differ in the extent to which they believe others acknowledge positive aspects of their identity such as expertise (perceived expertise affirmation), these individual beliefs also convert into a

team-level construct (reciprocal expertise affirmation). In order to reap the potential benefits of perceived/reciprocal expertise affirmation for team work, it is important to gain more detailed knowledge regarding their development and effects at both levels of analysis. Explicitly distinguishing between the individual and the team level can function as a starting point for theory and studies to further our knowledge of the importance of positive identities for team work. This study is a first step in that direction.

Limitations and suggestions for future research

The current study's contributions should be interpreted in light of its limitations. One issue that warrants discussion is the small sample size at the team level of analysis. The simulation study from Gagné and Hancock (2006) has shown that model convergence and construct reliabilities are of much more importance than sample size for reliable results in a confirmatory factor analysis. In spite of the fact that these authors have shown that *if* the model converges *and* constructs reliabilities are high, as in our case, estimates are very likely to be reliable, we recommend future research to replicate our findings in a larger sample.

We used a consensus model to aggregate our focal construct to the team level of analysis (Chen et al., 2004). This means that we assessed reciprocal expertise affirmation with the same scale as its individual-level counterpart, and that the referent remained the same at both levels of analysis (i.e. "I"). In spite of the fact that this is the most common type of aggregation in organizational research and there are sufficient statistical preconditions to ensure agreement between the team members before using this aggregate in order to represent a collective belief (James, et al., 1984; Kozlowski & Klein, 2000), using a referent-shift model would also be an interesting option. In the latter case, the operationalization of the construct would remain the same at the individual level of analysis (e.g., "The other team members know in detail what I know and what I am capable of"). However, at the team level of analysis the referent of the items would change to "we" or the "team" (e.g., "Within this team, members can be sure that their expertise and capabilities are known by their fellow members"). In order to further develop the scale to measure expertise affirmation beliefs, it would be interesting to contrast and compare these two team-level constructs in future research.

Due to the conceptual overlap and high correlations with our expertise affirmation items we removed one item from the scales of team-based self-esteem ("The

other team members have faith in my competence") and psychological safety ("Working with members of this team, means that my unique skills and talents are valued and utilized"), respectively. Running all our analyses twice showed that the pattern of the results was the same with and without these items. That is, as we predicted, the solution with three latent constructs was a better fit to the data than a two- or one-factor solution at both the individual as well as the team level of analysis. With regard to the psychological safety scale, MacPhail et al. (2009) already discussed the importance of conceptual clarity between psychological safety and reciprocal expertise affirmation. Moreover, we are not the first to experience problems with this scale. For example, Baer and Frese (2003) reported omitting an item from the confirmatory factor analysis because participants did not seem to understand it correctly. Future research might take a closer look at the operationalization of psychological safety and team-based self-esteem, and rephrase some items in order to obtain higher levels of convergent and divergent validity.

Even though four key variables were addressed in relation to our focal construct, a more comprehensive nomological network should be examined in future research. Because research on expertise affirmation beliefs is still in its infancy, further efforts at construct validation should explore hypotheses concerning key antecedents and consequences of the construct (Chen et al., 2004). For example, one could expect that high-performing team members may have higher levels of perceived expertise affirmation than low-performers. At the team level, size may be an important antecedent because members are more visible in a small team than in a large team. Therefore, smaller teams may develop higher levels of reciprocal expertise than larger teams.

With regard to the consequences of expertise affirmation beliefs, there is little empirical evidence (MacPhail et al., 2009). It would, therefore, be interesting for future research to examine their effects on performance at each relevant level of analysis. For example, one might expect that perceived expertise affirmation predicts individual team members' motivation and performance, and that the team-level construct of reciprocal expertise affirmation adds to this prediction over and above the individual-level effect. Also, the expected positive effects of reciprocal expertise affirmation for team performance may be less straightforward than at the individual level. Even if high levels of reciprocal expertise affirmation within a team would increase motivation and

performance of the team members, this does not necessarily directly increase *team* performance. That is, high levels of team performance require the coordination of team members' individual efforts (cf. Kozlowski & Ilgen, 2006). This would suggest that the effects of reciprocal expertise affirmation on team performance may depend on team coordination mechanisms (e.g., Klimoski & Mohammed, 1994). In future research it would be interesting to explore these effects at both the individual as well as the team level of analysis.

Because in this study we were only interested in the convergent and divergent validity of our focal construct and a number of related yet distinct constructs, we did not address the directionality of the relationship between the constructs under scrutiny. Follow-up studies could shed further light on this directionality. For example, one could argue that reciprocal expertise affirmation may be an important ingredient for psychological safety within the team because it can be expected to make people less reluctant to voice their expertise and ask for and give each other advice (MacPhail et al., 2009). This, in turn, may reduce people's fear to be rejected by the rest of the team if they express themselves (psychological safety). Reciprocal expertise affirmation may also enable people to get to know each other's knowledge and skills and, as a consequence, foster trust of fellow members' expertise (increase credibility).

Conclusion

To conclude, in this chapter we have shown that perceived expertise affirmation is a meaningful construct at both the individual and team level of analysis. Moreover, we have shown that team members' individual perceptions of expertise materialize into a team-level emergent state (reciprocal expertise affirmation). That is, there are meaningful differences of perceived expertise affirmation within as well as between the teams. However, because this is only an initial construct validation, we look forward to future research that replicates the multi-level validation of perceived expertise affirmation and extends it by examining antecedents and consequences of this important multi-level construct for team work. In the next chapter, we take an initial step in identifying antecedents and consequences at both the individual as well as the team levels of analysis.

CHAPTER 3[2]

PERCEIVED EXPERTISE AFFIRMATION IN WORK TEAMS: A MULTI-LEVEL EXAMINATION OF ANTECEDENTS AND CONSEQUENCES

"*The deepest principle of human nature is the craving to be appreciated*".
(William James, 1842-1910)

Introduction

Feeling valued and respected matters to people. Maslow's (1943) proposition that esteem from others is a fundamental human need has been examined and confirmed in literature streams as diverse as team development, organizational socialization, and evolutionary and clinical psychology. For example, people are more inclined to interact with strangers who give them positive feedback such as compliments and admiration than with strangers who criticize and insult them (Jones, 1973; Shrauger, 1975). Moreover, people who feel disrespected or even rejected by a group of peers have been shown to experience anxiety (Baumeister & Tice, 1990) and depression (Coie, Terry, Zakriski, & Lochman, 1995). To ensure that they are (still) valued and respected, and to prevent "social pain", people continuously monitor their peers' behaviors and reactions toward them (King, Kaplan, & Zaccaro, 2008; Sheldon & Johnson, 1993), especially in groups that are important to them (e.g., Bernstein, Sacco, Young, Cook, & Hugenberg, 2010). In short, esteem and affirmation of one's qualities from important people is a fundamental human need that plays a major role in shaping our feelings and behaviors.

Seeking positive affirmation is also one of the major reasons why people work (Vroom, 1964). Work is an important life domain and a salient source of meaning and self-definition for most individuals (Ashforth & Mael, 1989; Dutton, Roberts, & Bednar, 2010). Many aspects define how employees see themselves in a work context, but one of the most important determinants of individuals' work identities is their expertise – i.e. their extensive knowledge or abilities based on research, experience, or occupation in a particular area (Ericsson, 1996) –. Because employees generally strive to construct and maintain a positive work identity (Ashforth & Kreiner, 1999), it is very important for

[2] An adapted version of this chapter appeared as Grutterink, H., Vegt, G.S. van der, Molleman, E., & Jehn, K.A. (2010). Feeling known: A multi-level examination of perceived expertise affirmation in work teams. In A. Toombs (Ed.), *Academy of Management Best Paper Proceedings*. In 2012, a previous version of this chapter was awarded with the SASP Outstanding Postgraduate Research Award (2nd place) in Adelaide.

employees that their co-workers acknowledge and affirm their expertise. Unfortunately, until now, this topic has been underexplored (MacPhail, Roloff, and Edmondson, 2009). Nevertheless, understanding the antecedents and consequences of employees' perceived expertise affirmation (i.e. the belief that one's expertise is recognized and acknowledged by co-workers) in work teams is highly relevant. Expertise is a salient positive component of most employees' identities, and perceived expertise affirmation may be a strong motivator that affects team members' willingness to contribute to the team's performance. (MacPhail et al., 2009).

Even though perceived expertise affirmation originates as an individual variable, teams may also develop a collective belief that within their team members' expertise is affirmed by their fellow members. To increase the effective functioning of organizational teams, it is important to examine not only the factors that contribute to individual perceptions of expertise affirmation but also the team-level factors that lead to the development of this collective belief of expertise affirmation within work teams. Therefore, in this study, we examine the individual as well as the team-level antecedents and consequences of perceived expertise affirmation in work teams. Building on prior research, we argue that perceived expertise affirmation is an individual cognitive variable that is related to the relative expertise, educational background similarities, and individual performances of team members. At the team level, we propose that it is related to inter-team differences in both longevity and size. Moreover, incorporating insights from the literature on team cognition (e.g., Cannon-Bowers, Salas, & Converse, 1993; Rico, Sánchez-Manzanares, Gil, & Gibson, 2008; Wegner, 1986), we argue that excellent team performance on interdependent team tasks requires team members motivated by perceived expertise affirmation and the coordination of individual members' contributions. Therefore, we propose that the relationship between perceived expertise affirmation and team performance depends on the team's shared expertise perceptions. These hypotheses are tested in a sample of multi-level and multi-source data from 400 individuals distributed across 86 organizational work teams from a variety of industries in the Netherlands. The results from this study provide insights into the origins and consequences of perceived expertise affirmation at work and increase our understanding of how identity-related factors influence effective team functioning (see Figure 3.1 for our conceptual model).

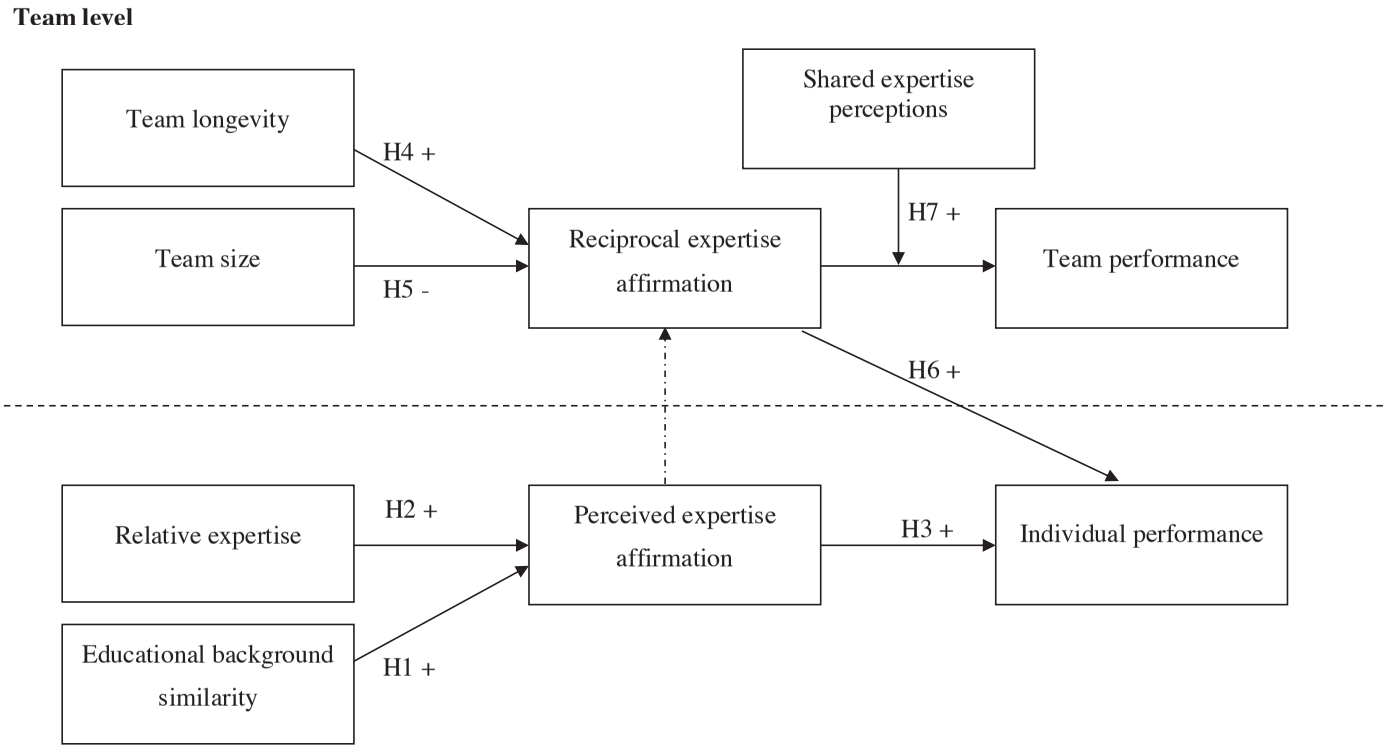
Theory and Hypotheses

Individual-level antecedents of perceived expertise affirmation

Although numerous antecedents of perceived expertise affirmation may be distinguished, the identity literature roughly distinguishes two categories of factors that affect how the individual sees oneself in relation to others in a group: similarity/familiarity versus distinctiveness/uniqueness (Ashforth, Rogers, & Corley, 2011; Brewer, 2003). Within these categories, we focus on variables that can be measured as objectively as possible to avoid common method and common source bias between our antecedents and perceived expertise affirmation. At the individual level of analysis, we, therefore, focused on educational background similarity as an antecedent related to similarity/familiarity, and on relative expertise as an antecedent related to distinctiveness/uniqueness. Moreover, we chose these two antecedents because they are both related to team members' expertise, an important component of an individual's identity within a work team (Van der Vegt, Van der Vliert, & Oosterhof, 2003). Below, we discuss these variables and their expected relationships with perceived expertise affirmation in more detail.

According to the similarity-attraction paradigm (Byrne, 1971), similarity between people is a primary basis for interpersonal attraction. Research has shown, for example, that team members compare their own characteristics to those of other members (Hogg & Terry, 2000) and select interaction partners that are similar to them (Valenti & Rockett, 2008). The more similar individuals are to the rest of their team, the more frequently they interact with their fellow members when working together on tasks (Chatman, Polzer, Barsade, & Neale, 1998). As a result of these increased levels of interaction, team members may exchange more personal information, making it more likely that they will believe that their fellow members affirm their expertise. Moreover, research suggests that people generally assume that similar people think, feel, and act as they do themselves (Clement & Krueger, 2002) and that people expect to be more transparent to similar people than to dissimilar ones (Frey & Tropp, 2006).

Figure 3.1 Hypothesized multi-level model of the antecedents and consequences of perceived and reciprocal expertise affirmation



This reasoning applies to similarities between individuals in general. Assuming that team members may be similar or different with respect to an almost infinite number of characteristics, the question is which types of similarity best predict perceived expertise affirmation. A first step in answering this question may be to realize that, depending on the context, some similarities are more salient to individuals than others (cf. Hogg & Terry, 2000). Because expertise is an important resource in organizational work teams, we argue that similarities among team members with regard to expertise-related characteristics are important determinants.

A second step in identifying important dimensions of similarity is suggested by the literature on demographic diversity and relational demography that distinguishes several indicators of expertise within work teams, including job type and educational background (e.g., Randel & Jaussi, 2003; Van der Vegt et al., 2003; Williams & O'Reilly, 1998). Research in this area suggests that similarity in job type and educational background capture important similarities in the type of knowledge and expertise held by team members (e.g., Harrison & Klein, 2007). Because similarities and differences between individuals' educational backgrounds are less arbitrary and more easily coded than similarities or differences in job type (i.e. the differences between biology and psychology are more straightforward and well defined than the differences between a software developer and a project leader) and because the number of educational backgrounds is more limited than the number of job types, we reasoned that it might be most practical to focus on similarities in educational background. In addition, an individual's educational background is often used as a key criterion for assigning members to teams because it offers a good indication of expertise (Reagans, Zuckerman, & McEvily, 2004). This line of reasoning leads us to expect that team members who are similar to their fellow team members in terms of educational background will think that others are more aware of their expertise. Specifically, they will perceive higher levels of expertise affirmation than those who are dissimilar.

Hypothesis 1. An individual team member's educational similarity to the rest of the team is positively related to his or her perceived expertise affirmation.

In addition to similarities between team members in their expertise *domain*, another important factor that may affect individual team members' perceived expertise affirmation is their general expertise *level* compared to that of other members. Expectation states theory (Berger, Cohen, & Zelditch, 1972) posits that task-related expertise is often used as a

specific status cue by team members; the higher a team member's relative expertise within the team is, the higher that person's status in the team will be (Berger et al., 1972). Research has shown that higher-status team members speak longer and that their actions and contributions receive more attention than those of lower-status members (see, for example, Shelly & Troyer, 2001). These heightened levels of participation and attention make the strengths and weaknesses of the relative expert member more visible to the rest of the team and to the expert team member herself. As a result, members with relatively high levels of expertise will feel more visible within the team and are more likely to think that their teammates are aware of their expertise. In contrast, members with relatively low levels of expertise will participate less in discussions, and their contributions will receive less attention, which will make them believe that their fellow team members are less aware of their expertise. In sum, this suggests a positive relationship between team members' relative expertise and the extent to which they think fellow team members acknowledge and affirm their expertise.

Hypothesis 2. An individual team member's relative expertise within the team is positively related to his or her perceived expertise affirmation.

Individual-level consequences of perceived expertise affirmation

As stated above, individual team members' perceived expertise affirmation may have important implications for their individual performance. From the social psychological literature, we know that people's perceptions of what others think about them can be very strong forces for individual motivation (e.g., Kenny, 1994; Vorauer, Hunter, Main, & Roy, 2000). Members of work teams have been shown to define their self-worth by gathering relevant information through their interactions with other members (Tajfel & Turner, 1986; Tyler & Blader, 2003). If they believe that fellow members recognize their expertise, this boosts their self-esteem and strengthens the self-group relationship (Tyler & Blader, 2003). Such members are also likely to report high levels of commitment, effort, and responsibility (Tyler & Blader, 2003). In contrast, the belief that one's expertise is not recognized may lead to negative self-fulfilling prophecies. Such individuals are likely to minimize their effort and disengage from the group (Spears, Ellemers, & Doosje, 2005). Based on such findings, it is reasonable to expect that the more people believe that others affirm their expertise, the more they will be motivated to perform at higher levels.

Hypothesis 3. An individual team member's perceived expertise affirmation is positively related to his or her performance.

Taking it to the team level: Antecedents of reciprocal expertise affirmation

Although perceived expertise affirmation may originate in individual cognition, theory suggests that teams may also develop a collective belief of expertise affirmation (MacPhail et al., 2009). Through differences in mutual interactions (e.g., frequency and quality of team meetings or discussions at lunch) and social activities, teams may start to differ in the extent to which they learn about how the rest of the team sees them.

We follow MacPhail et al., (2009), and refer to this emerging team-level concept as reciprocal expertise affirmation and define it as a team's collective belief that within this team the expertise of the members is acknowledged and recognized. A large number of team characteristics may affect reciprocal expertise affirmation. Because Ashforth et al. (2011) argue that optimal distinctiveness is crucial at all levels of identity construction and affirmation, we distinguish the same two broad categories of antecedents as for the individual-level construct: similarity/familiarity versus distinctiveness/uniqueness (Ashforth et al., 2011; Brewer, 2003). Moreover, in order to prevent common source and common method bias, we chose two team-level variables that were as objective as possible: team longevity as a proxy for familiarity between the team members and team size as a proxy for distinctiveness or uniqueness.

Team longevity refers to the overlap between the length of time that team members have been on the team together (Carroll & Harrison, 1998). For example, if Jane has been a member for a year and John has been a member of the same team for only six months, their overlap in membership is six months. The longer team members have worked together, the more likely it is that stereotyping decreases between team members and that social interactions become more personal (e.g., Pearce & Herbik, 2004). As a result, team members disclose more information about each other and are more helpful. Time simply allows more information to be conveyed (Harrison, Price, & Bell, 1998) and gives people more opportunities to show who they are. Taken together, this suggests that the longer the team members have worked together, the more familiar they become with one another, and the more likely they are to think that the rest of the team affirms their strengths and abilities.

Hypothesis 4. Team longevity is positively related to reciprocal expertise affirmation.

Another characteristic that may strongly influence the level of reciprocal expertise affirmation is team size. Research suggests that lower levels of interpersonal interaction and information exchange take place in large groups than in small groups (Williams &

O'Reilly, 1998), making it harder for people to learn how fellow team members see them. Moreover, in larger teams there is less time available for each individual member to demonstrate his or her expertise or to discuss problems as a team (Morgan & Lassiter, 1992). Consistent with this reasoning, the literature on "social loafing" has shown that in large teams, members feel that their contribution is only one among many others and that they are less visible to fellow team members (Latané, Williams, & Harkins, 1979). Therefore, team size not only decreases the visibility of individual team members' contributions to the group product (Kameda, Stasson, Davis, Parks, & Zimmerman, 1992), but it also provides team members with fewer opportunities to observe how others react to their contributions. Therefore, one would expect members of larger teams to feel less visible and distinct within their team, and, therefore, to think fellow members are less aware of their expertise, resulting in meaningful differences in the level of reciprocal expertise affirmation between teams.

Hypothesis 5. Team size is negatively related to reciprocal expertise affirmation.

Individual-level consequences of reciprocal expertise affirmation

Teams provide important contexts for influencing team members' behavior (Hackman, 1992). According to role theory, for example, team members develop collective expectations about their own and fellow members' roles that guide their behavior (e.g., Katz & Kahn, 1978). Also, implicit and explicit social influences within a team may make team members conform to team norms and practices. This may occur through cognitive or emotional contagion, processes through which a person or a group affects the emotions or behavior of another person or group through the conscious and unconscious induction of emotional or cognitive states or behavior (e.g., Cacioppo & Petty, 1982; Barsade, 2002).

Even though perceived and reciprocal expertise affirmation are positively related because the basis for the latter lies in the perceptions of the individual members, both constructs may nevertheless vary independently. For example, teams with high levels of reciprocal expertise affirmation may still contain individuals with a low level of perceived expertise affirmation. The other way around is also possible. An individual may score very high on perceived expertise affirmation in a team with a low overall level of reciprocal expertise affirmation.

In addition to the expected motivational effect of perceived expertise affirmation on individual performance, we also expect a positive relationship between reciprocal expertise affirmation and individual performance. Within a team that scores high on reciprocal

expertise affirmation, overall, team members believe that their contribution to the collective performance is recognized, which motivates them to contribute their expertise to the team task (MacPhail et al., 2009). According to social learning principles (Bandura, 1997), motivation in itself can be contagious. So, even if an individual scores low on perceived expertise affirmation, seeing the enthusiasm with which their fellow team members do their job may also motivate him or her to work harder.

Moreover, in teams with a high level of reciprocal expertise affirmation it is much more likely that a climate of psychological safety arises (cf. MacPhail et al., 2009). This encourages team members to openly discuss their potential contributions and to bring in their expertise in order to come up with better and more creative solutions to team tasks. Because team tasks are interdependent, every team member may benefit from these creative ideas, suggestions and solutions that arise through such group discussions, and may positively affect individual team members' performance.

The other way around may also be possible, a team that scores low on reciprocal expertise affirmation may be less inclined to engage in lively group discussions. This, in turn, may demotivate team members regardless of their individual level of perceived expertise affirmation. Overall, this suggests that in addition to, and independent from, the expected positive relationship between perceived expertise affirmation and performance at the individual level, there is a cross-level effect of reciprocal expertise affirmation that has the potential to explain additional variance in the individual performance of team members.

> *Hypothesis 6. Reciprocal expertise affirmation is positively related to team member's individual performance.*

Team-level consequences of reciprocal expertise affirmation

Inter-team differences in the level of reciprocal expertise affirmation may have important implications for team functioning and effectiveness. According to MacPhail et al. (2009), reciprocal expertise affirmation enables effective collaboration in work teams because it makes team members believe that their contribution to the collective performance is sufficiently recognized and that it is, therefore, safe to express uncertainty, disagreement or the need for advice without jeopardizing others' positive views of their expertise. As a result, reciprocal expertise affirmation motivates team members to openly discuss their contributions and share their expertise to produce better and more creative team solutions.

Although the above reasoning suggests a direct positive relationship between reciprocal expertise affirmation and team performance, we argue that the team-level performance implications of reciprocal expertise affirmation are more complex. Because of the inherent interdependence in team work high levels of team performance require that individual contributions to the collective undertaking are smoothly coordinated (Rico et al., 2008; Van de Ven, Delbecq, & Koenig, 1976). Indeed, for a team to perform well, its members must not only be motivated to contribute and fully utilize their individual expertise, but also have to align their activities with those of others who are working toward the same goal (e.g., Faraj, & Sproull, 2000). Research suggests that an important factor in the coordination of efforts between team members is the extent to which team members implicitly agree about their relevant expertise for a particular team task (Austin, 2003; Levesque, Wilson & Wholey, 2001; Wegner, 1986). We will refer to this agreement as *shared expertise perceptions*.

Shared expertise perceptions can be seen as a specific component of a transactive memory system (TMS), defined as a cognitive system that combines the knowledge possessed by each individual with a shared and accurate awareness of who knows what (Wegner, 1986). That is, shared expertise perceptions refer to the extent to which team members have a similar view of fellow members' expertise. So, in contrast to reciprocal expertise affirmation, shared expertise perceptions do not deal with the extent to which team members believe that other team members affirm their expertise (meta-perception) but regard the *actual* view team members have of each other (other-perception).

There are several reasons why shared expertise perceptions may function as an implicit coordination mechanism. First, agreement about "who knows what" promotes the development of an effective division of labor. When team members share expertise perceptions, they implicitly agree about who knows what, it is clear which members can be entrusted with a certain task. In this way, task assignment will run smoothly and efficiently (Wegner, 1986). Agreement about who is responsible for particular expertise allows team members to specialize and divide cognitive labor among themselves in terms of encoding, storing and retrieving information effectively (Moreland & Myaskovsky, 2000). For example, this agreement can help team members to quickly send and request information from the appropriate individuals (Palazzolo, Serb, She, Su, & Contractor, 2006), to anticipate the actions, task demands, and needs of their colleagues, and to adjust their own behavior accordingly. This "agreement about who knows what" allows them to perform

these tasks without communicating intensively with each other (Rico et al., 2008) and can thus function as a road map for accessing and utilizing members' expertise during task-related interactions (Bunderson, 2003).

When the team members agree about one another's expertise, effective coordination of activities is facilitated. In teams with high levels of shared expertise perceptions, reciprocal expertise affirmation will result in contributions, efforts, and actions that are in sync with the contributions, efforts, and actions of other individuals. Reciprocal expertise affirmation motivates team members to work hard, whereas the shared expertise perceptions ensure that the contributions resulting from such hard work are well coordinated. This makes it less likely that team members will lose precious time looking for information (Gibson & Vermeulen, 2003), duplicating actions, or doing unnecessary tasks, ultimately resulting in higher levels of team performance. Therefore, we expect that for teams with high levels of shared expertise perceptions, reciprocal expertise affirmation will be positively related to team performance.

In teams with low levels of shared expertise perceptions, reciprocal expertise affirmation may also stimulate team members to work diligently. However, the resulting effort will be partly in vain because individual activities are not appropriately coordinated. In such cases, it does not matter whether reciprocal expertise affirmation is high or the team is motivated because team processes are inefficient without coordination. This results in team members performing unnecessary tasks, work duplication, underuse of relevant areas of expertise, and shirked responsibilities. This suggests that reciprocal expertise affirmation will only be positively related to team performance in teams with high levels of shared expertise perceptions.

Hypothesis 7. The relationship between reciprocal expertise affirmation and team performance is moderated by shared expertise perceptions; this relationship will only be positive in teams with high levels of shared expertise perceptions.

Method

Sample and data collection procedures

We tested our hypotheses with multi-source data from 86 teams of 400 white-collar workers in the Netherlands (24% management, 19.5% support and staff, 14.9% medical, 13% financial, 9.2% sales, 8% information and communication technology, 6.9% service, and 3.4% education). To reduce mono-method and mono-source biases, we gathered survey and network data from both the supervisors and team members. Two weeks before the collection of the survey data, the supervisor of each team was interviewed about his or her demographics, team size, and the type of work performed by the team. The supervisors were also asked to list up to five expertise domains deemed most important for the effective accomplishment of their team's goals (M=3.52, SD=1.17). For example, "knowledge about taxes" was a crucial expertise domain for a financial team, whereas for a nursing team in a psychiatric department of a hospital, "practical knowledge concerning care for psychiatric patients" was considered highly important. These expertise domains were used to determine team members' relative expertise and to determine the teams' levels of shared expertise perceptions (see the measurement section below). After the interview with the supervisor the team members were asked for their cooperation. During this meeting, the team members' names and demographic information (e.g., age, gender, educational background, and team longevity) were collected.

The second measurement took place two weeks later. Using a survey, team members rated each other's expertise in the domains identified by the team supervisor and answered questions related to perceived expertise affirmation. To decrease employees' reluctance to answer questions about specific colleagues, all questionnaires were distributed and gathered in person. In addition, it was explained that all data would be treated confidentially, that names would only be used to link responses from supervisors and subordinates, and that, after links had been established, names would be replaced by numbers. This increased participants' trust that their answers would be treated confidentially and would only be seen by a third party. A positive side effect of this personal approach was that participants met once more with the researcher, which increased their willingness to participate and, in turn, increased the response rate. For supervisors, the second measurement entailed a survey in which they were asked to rate each member's individual performance as well as the team's overall performance.

All 86 supervisors of the participating teams returned their questionnaires. Supervisors' ages ranged from 21 to 61, with an average age of 37 years (SD=11.71). Their average number of months in the organization, position, and team were 108, 74, and 46, respectively. Twenty-nine supervisors were male (34%). Of the 522 team members, 400 returned their surveys (a 77% response rate). Team members' ages ranged from 18 to 67 (M=34, SD=11.57). Their average number of months in the organization, position, and team were 80, 60, and 37, respectively. Of the 400 team members, 49.4% were male.

Individual-level measures

Educational background similarity. Team members indicated which of nine categories best represented their educational background ("technical", "managerial", "legal", "medical", "natural sciences", "economics", "linguistic/cultural", "social sciences", or "other"). After coding the educational background similarity of all dyads within the team (0=dissimilar, 1=similar), we computed the educational background similarity for each individual as a percentage of fellow team members with similar educational backgrounds (i.e. a Euclidian distance measure; cf. Tsui & O'Reilly, 1989).

Relative expertise. We asked team members to rate each of their fellow members on all of the team-specific expertise domains identified by the supervisor. The response scale for each domain ranged from 1 ("weak") to 7 ("excellent"). Next, we computed individual team members' relative expertise by computing the mean of the other team members' ratings across the different domains and subtracting the mean level of expertise in a team. This individual deviation from the team mean resulted in a single score for each individual team member, which represented that individual's relative expertise compared to the expertise of his or her teammates.

Perceived expertise affirmation. We measured individual-level perceived expertise affirmation with three items developed for this study: "The other team members are precisely aware of my knowledge and expertise", "The other team members know in detail what I know and what I am capable of", and "The other team members have an accurate view of what I know". Team members rated perceived expertise affirmation on a response scale ranging from 1 ("completely disagree") to 5 ("completely agree"). Cronbach's alpha for this scale was .85.

Individual performance. Supervisors rated each individual team member's performance using three items based on Turnley, Bolino, Lester, and Bloodgood (2003): "This team member fulfills his or her tasks the way I like them done", "This employee fulfills

his/her tasks in an effective manner", and "Overall, this employee performs well in his/her job." The response scale ranged from 1 ("completely disagree") to 5 ("completely agree"). Cronbach's alpha for this scale was .86.

Team-level measures

Team longevity. Team longevity is a team-level construct that captures the overlap in time that team members have worked together. Consistent with Carroll and Harrison (1998), we calculated team longevity by comparing the team tenure (in months) of every team member pair and determining the overlaps. For each pair, we chose the minimum value of the two scores because this was the number of months these two members had worked *together* on the team. We then averaged these overlapping months for all pairs of team members to represent team longevity (for the formula, see Carroll & Harrison, 1998: 660).

Team size. Team size is a team-level construct that measures the number of members in each team, excluding the team leader. This measure was reported by the team leaders and confirmed by the team members. Team sizes varied between 3 and 20 members, with an average of 6.07 (SD=3.19).

Reciprocal expertise affirmation. We aggregated the individual perceived expertise affirmation scores to the mean team levels to capture reciprocal expertise affirmation, that is, the mutual recognition by team members that they respect, value and affirm each other's expertise (a composition variable, see Kozlowski & Klein, 2000), based on sufficient statistical support. The mean R_{wg} value for individual perceived expertise affirmation was .81 (James, Demaree, & Wolf. 1984). Furthermore, one-way analyses of variance showed that reciprocal expertise affirmation differed significantly between teams ($F[314, 85]=2.049$. $p<.0001$). The ICC(1) value of .18 indicated that a significant proportion of the total variance was accounted for by team membership. ICC(2) was .52. Cronbach's alpha was .88.

Shared expertise perceptions. We operationalized shared expertise perceptions, as team members' agreement regarding one another's areas of expertise, using a direct approach (cf. Levesque et al., 2001). Social cognition researchers typically focus on intra-team agreement about team members' expertise as a crucial component of the social cognitive mechanisms for coordinating the encoding, storage, and retrieval of information among individuals in a team (Hollingshead, 2001). From this perspective, and as we operationalize it in this study, shared expertise perceptions are an indicator of the degree

to which the team has formed transactive memory (Austin, 2003; Moreland & Myaskovski, 2000; Stasser, Vaughan, & Stewart, 2000). We used team members' ratings ranging from 1 ("weak") to 7 ("excellent") of each fellow member for the expertise domains identified by the supervisor. For each member, we calculated a standard deviation for each expertise domain to establish the extent to which other members of the team agreed about this focal individual member's expertise. Next, we multiplied these values by –1 so that higher scores represented more agreement. We subsequently averaged these reversed standard deviations to obtain the team's overall agreement measure for each individual team member. Finally, these individual mean standard deviations were aggregated to the team level to represent the extent to which the team agreed about each member's expertise in all domains. In this case, a higher team score indicated a higher level of shared expertise perceptions.

Team performance. The supervisors rated the performance of their team using six criteria adapted from Gibson, Zelmer-Bruhn, & Schwab (2003): "Continuity of the production process", "Meeting deadlines", "Speed at which products/services are delivered", "Reliability", "Control of the production process", and "Consistency in the provided quality". The response scale ranged from 1 ("far below average") to 5 ("far above average"). Cronbach's alpha for this scale was .70.

Data analysis

Because of the nested structure of our dataset, we conducted two separate multi-level analyses to test hypotheses 1-3 using MLwiN (e.g., Snijders & Bosker, 1999). To test our first two hypotheses, we determined a baseline model without predictor variables and then ran a second model containing the standardized individual-level predictor variables. The significance of the decrease in log-likelihood between the two models was established via a chi-squared difference test. To examine hypothesis 3, we ran a second analysis with individual performance as the dependent variable and perceived expertise affirmation as the predictor. We ran all analyses twice, once with and once without possible control variables (e.g., age, gender). These analyses led to the same conclusions. We chose to report the results of the analyses without the control variables because Becker (2005) has argued that including "impotent" control variables not only diminishes statistical power but also biases parameter estimates.

To test hypotheses 4-6 regarding the team-level antecedents and consequences of reciprocal expertise affirmation, we conducted two linear OLS regression analyses. In the

first OLS regression, we used reciprocal expertise affirmation as the dependent variable, and we entered the hypothesized team-level antecedents, team longevity, and team size into the regression equation. In the second OLS regression analysis, we used team performance as the dependent variable and entered the main effects of reciprocal expertise affirmation and the team's shared expertise perceptions in the first step of the analysis. In the second step, we entered the two-way interaction between reciprocal expertise affirmation and the team's shared expertise perceptions. We standardized the independent variables before the interaction term was calculated (Cohen & Cohen, 1983).

Results

Descriptive statistics and intercorrelations

Table 3.1 presents the means, standard deviations (SD), and zero-order Pearson correlations for all study variables. The correlations between the individual-level variables do not take into account statistical dependence (nesting of individuals in teams) and hence should be interpreted with caution.

Individual-level analyses

To test the hypothesized effects of the two individual-level antecedents of perceived expertise affirmation, we ran a multi-level analysis using MLwiN. After estimating the null-model, the addition of the two individual-level predictors proved highly significant ($\Delta\chi^2$=17.30, df=2, p<.0005). As predicted, both team member educational background similarity and relative expertise were positively related to individual perceived expertise affirmation (b=.11, *s.e.*=.04, p<.01) and (b=.11, *s.e.*=.03, p<.001). These results support hypotheses 1 and 2.

Hypothesis 3 predicted a positive relationship between perceived expertise affirmation and individual performance. To test this, we conducted a separate multi-level analysis in MLwiN. For individual performance, the difference in model fit between the baseline model and the model in which individual perceived expertise affirmation was added was highly significant ($\Delta\chi^2$=10.97, df=1, p<.001). As expected, the coefficient estimate for the relationship between individual team members' perceived expertise affirmation and supervisor-rated individual performance was positive and significant (b=.15, *s.e.*=.05, p<.005). These results support hypothesis 3.

Table 3.1

Univariate Statistics and Pearson Correlations

	Individual-level variables (n=400)	**M**	**SD**	**1**	**2**	**3**	**4**
1	Educational background similarity	.45	.38				
2	Relative expertise	.01	.63	.04			
3	Perceived expertise affirmation	3.40	.72	.14 **	.15 ***		
4	Individual performance	5.25	1.00	.09	.24 ***	.17 ***	
	Team-level variables (n=86)	**M**	**SD**	**1**	**2**	**3**	**4**
1	Team longevity	18.21	17.07				
2	Team size	6.07	3.19	.03			
3	Reciprocal expertise affirmation	3.42	.45	.20	-.32 **		
4	Shared expertise perceptions	-.81	.33	.04	-.18	.22 *	
5	Team performance	3.56	.44	-.03	.02	.18	.01

* $p<.05$

** $p<.01$

*** $p<.005$

Table 3.2

Team-Level Results of the Regression of Team Performance on Reciprocal Expertise Affirmation and Shared Expertise Perceptions (OLS)

		Team performance			
		Model 1		**Model 2**	
Model	**Variable**	***b***	***SE***	***b***	***SE***
1 Main effects	Reciprocal expertise affirmation	.08	.05	.07	.05
	Shared expertise perceptions	-.02	.05	-.01	.05
2 Interaction	Reciprocal expertise affirmation X Shared expertise perceptions			.11 *	.04
	ΔF	1.52		7.92 *	
	ΔR^2	.04		.09 *	
	R^2	.04		.12	

n=86 teams * p<.01

Team-level analyses

To test the hypothesized effects of the two team-level antecedents of reciprocal expertise affirmation, we ran an OLS regression analysis. The effect of these team-level predictors was highly significant (ΔR^2=.15, ΔF=7.05, p=.001). An inspection of the regression weights showed that, as predicted, team longevity was positively related to reciprocal expertise affirmation (b=.10, t=2.08, p<.05), whereas the coefficient for team size was negative (b=-.15, t=-3.18, p<.01), supporting hypotheses 4 and 5, respectively.

We used the APIM-procedure from Kashy & Kenny (2000) to examine test hypothesis 6 that predicts that perceived expertise affirmation and reciprocal expertise affirmation contribute *independently* to the prediction of individual performance. The APIM-procedure was initially developed for analyzing dyadic data, but can take into account other types of nested data, such as, in our case individuals within teams. The first step of this procedure is to make the two focal constructs completely independent from each other by subtracting the team means from the individual scores. Thus, we created a

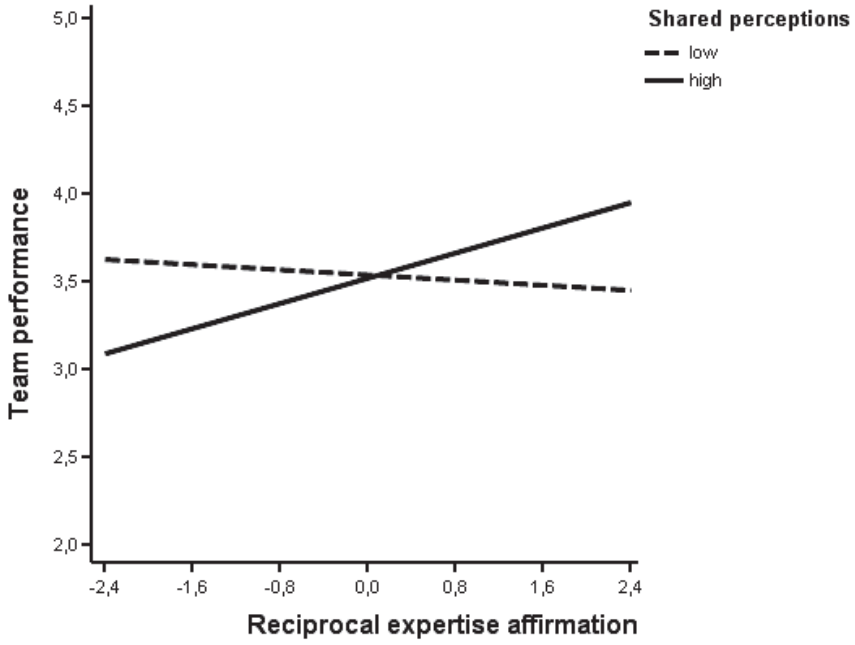
new individual-level variable by subtracting the team means (reciprocal expertise affirmation) from the individual scores (perceived expertise affirmation). Secondly, we ran a multi-level analysis with perceived and reciprocal expertise affirmation as simultaneous predictors of individual performance. Both perceived expertise affirmation and reciprocal expertise affirmation contributed *independently* to the prediction of individual performance (*b*=.17, *s.e.*=.06, *p*=.003), and (*b*=.22, *s.e.*=.08, *p*=.007), respectively.[3] This confirmed hypothesis 6.

To test the hypothesized consequences of reciprocal expertise affirmation for team performance, we conducted a second OLS regression analysis. The results of this analysis are shown in Table 3.2. Hypothesis 7 predicted that the team's shared expertise perceptions would moderate the relationship between reciprocal expertise affirmation and team performance; there is only a positive relationship between reciprocal expertise affirmation and team performance if due to the shared expertise perceptions individual efforts are implicitly coordinated. The results showed that after adding the main effects of reciprocal expertise affirmation and the team's shared expertise perceptions, the two-way interaction between reciprocal expertise affirmation and the team's shared expertise perceptions was significant in predicting team performance (ΔR^2=.09, ΔF=7.92, *p*=.006).

To interpret this interaction, we calculated two simple slopes for reciprocal expertise affirmation at one standard deviation above and below the mean of the teams' shared expertise perceptions (cf. Aiken & West, 1991). As predicted, for teams with high levels of shared expertise perceptions, reciprocal expertise affirmation was positively related to team performance (*b*=.19, *t*=3.23, *p*<.0001), whereas for teams with low levels of shared expertise perceptions, reciprocal expertise affirmation was unrelated to team performance (*b*=-.03, *t*=-.05, *n.s.*) (see Figure 3.2). Hypothesis 7 was thus confirmed.

[3] At the individual level of analysis, we ran all our analysis twice, replacing individual performance by individual effort as rated by the supervisor. These analyses showed a similar pattern of results. Full results can be obtained by the author.

Figure 3.2 Two-way interaction for the regression of team performance on reciprocal expertise affirmation and shared expertise perceptions



Discussion

This chapter demonstrates the relevance of the concept of perceived expertise affirmation in a work team context. We specified and empirically examined a partial nomological network of perceived expertise affirmation at both the individual and team levels of analysis, highlighting several antecedents and consequences. We used multi-source data from 400 individuals distributed across 86 teams from a variety of industries in the Netherlands. The results generally supported the proposed model and provided several important insights.

First, our study shows the usefulness of conceptualizing perceived expertise affirmation as a multi-level construct. A multi-level lens helped us to gain more insights into the differential development and effects of perceived expertise affirmation at the individual

level of analysis, when compared to the team level. Our results show that meaningful differences may arise within as well as between teams regarding the extent to which members believe to be affirmed in their expertise. At the individual level of analysis, employee similarities in the educational background and relative levels of expertise shed light on the micro-foundations of perceived affirmation in work teams. At the team level of analysis, team longevity and team size partially explained how inter-team differences emerge in perceived affirmation. Moreover, perceived expertise affirmation and reciprocal expertise affirmation contributed independently to the prediction of individual performance. These findings suggest that it is important to treat individual perceived expertise affirmation and reciprocal expertise affirmation as separate constructs with different functions and structures (cf. Kozlowski & Klein, 2000; Morgeson & Hofmann, 1999).

Second, by distinguishing between different levels of analysis, we were able to explain within-team as well as between-team variances in performance. Our finding of a direct and positive individual-level relationship between perceived expertise affirmation and individual performance as well as a conditional positive relationship between reciprocal expertise affirmation and team performance underscores the need to distinguish between individual-level and team-level perceived expertise affirmation. This contributes to the literature on positive identities at work (e.g., Dutton et al., 2010). More specifically, our results highlight the importance of the construction and maintenance of perceived expertise affirmation as a central and positive aspect of employees' work identities at different levels of analysis.

Third, our results support a growing body of research indicating that team mental models play an important role in the realization of team performance (e.g., Cannon-Bowers et al., 1993; Mohammed, Ferzandi, & Hamilton, 2010). At the same time, our findings add to this literature by showing that reciprocal expertise affirmation and shared expertise perceptions jointly predict team performance. This finding suggests that team members' shared mental models about "who knows what" may be a necessary but insufficient condition to obtain high performance. Indeed, motivation caused by perceived expertise affirmation may be as important for high performance in interdependent teams as the team members' abilities to recognize one another's expertise (for similar findings, see Faraj & Sproull, 2000; Stasser et al., 2000). By providing insight into what motivates team

members, our study increases the understanding of how work teams can effectively use their members' collectively recognized areas of expertise.

Strengths, limitations, and future research

The design of this study had several notable strengths that increase our confidence in the findings. For example, to prevent common variance, we gathered data from different sources (e.g., demographics, peer ratings, self-reports, and supervisor ratings). Moreover, we measured our variables at different points in time. This temporal separation of the measurement of the predictor and criterion variables minimized artificial covariation between our study variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Despite these strengths, there are also several study limitations that must be discussed.

First, this study was an initial step in relating perceived expertise affirmation to pertinent antecedents and consequences. Although we included several theoretically relevant variables at different levels of analysis using different sources, future research may examine a more comprehensive nomological net of perceived expertise affirmation in work teams. Possible additional antecedents that could be studied include task interdependence (Van der Vegt et al., 2003; Wageman, 1995), extraversion (Barrick, Stewart, Neubert, & Mount 1998), and emotional intelligence (Goleman, 1995). Possible additional consequences are affective outcomes, such as satisfaction, team commitment or lowered levels of work stress among members.

Second, our study design did not allow us to explicitly test the direction of causality of the relationships suggested in our model. The relationship between individual perceived expertise affirmation and supervisor-rated individual performance, for example, could be opposite to what we have suggested. It is possible that individual team members may report higher levels of perceived expertise affirmation *after* they receive positive performance evaluations from their supervisors. Alternatively, and perhaps even more realistically, reciprocal relationships may exist between our study variables. A longitudinal research design in which the variables of interest are all measured at two or more periods in time is needed to address such issues.

Third, future research could increase our understanding of the mechanisms that are responsible for the effects of perceived expertise affirmation, specifically by examining the role of mediator variables. For example, self-verification theory states that when people feel known, they feel safe and believe that future interactions will be free from conflict (Swann & Read, 1981). It could therefore be expected that uncertainty reduction (e.g., Hogg &

Terry, 2000) or psychological safety (MacPhail et al., 2009) may play an important mediating role in the relationship between reciprocal expertise affirmation and performance.

Fourth, it is important to note that even though people usually dedicate much time to observing others' behaviors and reactions toward them, their conclusions about how others see them may not always be accurate (Kenny, 1994). Although research has shown that people are competent at predicting how specific others see them (Elfenbein, Eisenkraft, & Ding, 2009), it is possible that individuals sometimes rely too heavily on self-knowledge in judging how others view them. It might thus be interesting to empirically examine the relationships between perceived expertise affirmation and the accuracy of these perceptions, as well as how these two dimensions – perceptions and accuracy – together affect relevant outcome variables.

Finally, it is important to examine what types of teams and individuals are most likely to benefit from expertise affirmation. For example, MacPhail et al. (2009) predicted that reciprocal expertise affirmation is especially useful as a motivational mechanism in teams consisting of people whose expertise domains differ. In such teams, perceived expertise affirmation might help to overcome problems that arise as a result of social categorization processes (Tajfel & Turner, 1986). Additionally, it might be interesting to examine the role of personality variables. With regard to the motivation and performance of individual team members, perceived expertise affirmation may be more important for some individuals than for others and, as such, may have stronger effects for certain types of individuals (e.g., those with a high need for approval; Leary, 1983). Future research should identify the characteristics of teams and individuals for which perceived expertise affirmation is most important.

Practical implications

Despite these limitations, our results also provide some directions for practical interventions aimed at increasing motivation and performance in organizational work teams. In general, our results suggest that it is preferable to form small teams that work together for longer periods of time. Because the ability to influence team composition is often lacking, it is probably most effective to directly target interventions aimed at increasing individual team members' perceived expertise affirmation. For example, interventions such as cross-training and team building activities may ease team members' evaluative concerns (see Gaertner et al., 1999). More specifically, and following the value-

in-diversity literature (Bettencourt & Sheldon, 2001), one may consider interventions aimed at stressing unique individual skills while making clear how these are indispensable for team performance as a whole. Team meetings in which all members have time to discuss their strengths and weaknesses in relevant domains and how these are related to the team products and outcomes may be useful in this regard. Finally, given the moderating role of shared expertise perceptions seen in this study, organizations might develop tools that facilitate the development and maintenance of shared perceptions regarding members' knowledge and expertise. Simple tools (e.g., electronic directories) that show members' domains of expertise could be a good starting point (Moreland, 1999).

Conclusion

Clearly, empirical research of expertise affirmation in organizational work teams is in its infancy. This study takes an initial step toward increasing our understanding of the role of expertise affirmation in work teams by identifying both individual- and team-level antecedents and showing their motivating potential and implications for team performance. Because continued research is required to fully understand the role of perceived expertise affirmation in organizations, it is our hope that the insights from this study will encourage organizational scholars to embark on substantive research addressing the importance and dynamics of perceived expertise affirmation in work teams.

CHAPTER 4[4]

RECIPROCAL EXPERTISE AFFIRMATION AND SHARED EXPERTISE PERCEPTIONS IN WORK TEAMS: THEIR IMPLICATIONS FOR COORDINATED ACTION AND TEAM PERFORMANCE

Introduction

Working in teams, as a strategy for managing complex work (Devine, Clayton, Philips, Dunford, & Melner, 1999), necessitates employees' consideration of their social environment. Due to greater task interdependence and ubiquity of social interaction in work teams, and the evaluative, performance-driven nature of teamwork, it is very important for team members to observe and interpret each other's behavior. Many studies have shown that these perceptions and evaluations of other members strongly affect team processes and effectiveness (for an overview, see Hackman, 1992). Much less is known, however, about the role of another important element of interpersonal perception, namely the effects of team members' beliefs about how other members view them, i.e. their meta-perceptions (Kenny, 1994; King, Kaplan, & Zaccaro, 2008).

People's meta-perceptions may nevertheless play an important role in team settings. For example, team members' choice of whom to work with within the team may not only be determined by the expertise level of fellow team members, but also by how they think these potential collaborators perceive them. That is, team members may refrain from working with technically competent fellow members to reduce the chance that they may form an unfavorable impression of them. In contrast, when people are certain that their fellow members acknowledge their unique, positive characteristics they may become less reluctant to ask for advice, express dissent, or offer help to their fellow team members.

One of the most important characteristics that helps people define who they are at work is their task-related expertise (cf. Molleman & Broekhuis, 2012; Molleman, Broekhuis, Stoffels, & Jaspers, 2010). People's task-related expertise (henceforth expertise) encompasses their knowledge, skills, or ability in a particular area of study that is important for completing their specific subtasks within the work team. Because expertise incorporates employees' strengths, talents, and skills, it is a central and positive aspect of their work identity (cf. Roberts, Dutton, Spreitzer, Heaphy, & Quinn, 2005; Van der Vegt &

[4] This chapter is based on Grutterink, H., Vegt, G.S. van der, Molleman, E., & Jehn, K.A. (in press). Reciprocal Expertise Affirmation and Shared Expertise Perceptions in Work Teams: Their Implications for Coordinated Action and Team Performance. *Applied Psychology: An International Review*.

Bunderson, 2005). Research has shown that people strive to maintain a positive identity (Dutton, Roberts, & Bednar, 2010). Therefore, and because expertise is a crucial cognitive resource in work teams (Faraj & Sproull, 2000) one would expect that team members' mutual recognition that fellow members acknowledge and recognize their expertise – i.e. reciprocal expertise affirmation (MacPhail, Roloff, & Edmondson, 2009) – is a strong motivational force in work teams.

In 2009, MacPhail et al. called for research examining the effects of reciprocal expertise affirmation on team processes and performance outcomes. They argued that reciprocal expertise affirmation may facilitate the understanding, verification and integration of different expertise domains and as such allows teams to more effectively use their individual members' strengths. Unfortunately, the potential impact of reciprocal expertise affirmation on team processes and performance outcomes has still received little empirical attention. The present study aims to replicate and extend the findings in the previous chapter by investigating the relationship between reciprocal expertise affirmation and teams' coordinated action (a process variable) as well as the teams' performance (an outcome variable; cf. Kozlowski & Ilgen, 2006). Specifically, we propose that in teams with higher levels of reciprocal expertise affirmation, members will be more motivated to contribute their expertise to the team task in order to reach higher levels of team performance through better coordinated action.

As in Chapter 3, we propose that high levels of reciprocal expertise affirmation are a necessary but not sufficient condition to establish high levels of team performance. The reason is that work teams are comprised of members who are at least moderately interdependent (Kozlowski & Ilgen, 2006), which means that team members should coordinate their individual contributions in order to realize high team performance. Team cognition research has shown that an important determinant of intra-team coordination is the extent to which team members' perceptions of task-relevant characteristics overlap (Salas, Sims, & Burke, 2005). Shared perceptions lead to common expectations, which makes it easier to agree about who will do which tasks and with whom to coordinate actions (see, for example, Klimoski & Mohammed, 1994; Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000). Accordingly, and because we focus on task-related expertise, we argue that the sharedness of team members' expertise perceptions will moderate the relationship between reciprocal expertise affirmation and team coordinated action.

Moreover, we propose that this interactive effect indirectly affects team performance through coordinated action.

Below, we first clarify the meaning of our core constructs by discussing the similarities and differences with related constructs. Next, we elaborate on the theoretical mechanisms that explain why and how reciprocal expertise affirmation can be expected to influence team coordinated action and, indirectly, team performance, and how sharedness of expertise perceptions is expected to moderate these relationships. Then, we report the results of a study among 39 student management teams working on a complex four-week business simulation, developed to test our hypotheses.

Theoretical Background and Hypotheses

Reciprocal expertise affirmation

Reciprocal expertise affirmation represents the extent to which team members affirm each other's expertise (MacPhail, et al. 2009). The basis of reciprocal expertise affirmation lies in team members' individual meta-perceptions, that is, their perceptions about how other team members see them (Kenny, 1994). It can be measured by asking individual team members how they personally believe that other team members affirm their expertise by using an individual referent. If team members communicate with each other, voice their opinion, and work collectively on the team task, it is likely that over time team members develop similar beliefs about the extent to which other members affirm their expertise so that perceived expertise affirmation becomes *reciprocal.*

Reciprocal expertise affirmation differs from seemingly related constructs like collective efficacy and psychological safety. These constructs represent team climates in which team members all think that the team has the ability to perform a wide range of tasks across different activities (collective efficacy; Stajkovic, Lee, & Nyberg, 2009), or they will not be harmed if they make or report mistakes, ask for advice or seek feedback (psychological safety; Edmondson, 1999). In contrast to reciprocal expertise affirmation, both collective efficacy and psychological safety are rooted in team members' perceptions about the team as a whole, using a team referent. Moreover, these constructs do not focus on expertise but on the content domains of anticipated performance and the absence of perceived threat, respectively. Finally, reciprocal expertise affirmation and collective efficacy are cognitive constructs, while psychological safety is more affective in nature.

Reciprocal expertise affirmation also differs from a transactive memory system (TMS), defined as a cognitive system that combines the knowledge possessed by each

individual with a shared and accurate awareness of who knows what (Wegner, 1986). Reciprocal expertise affirmation does not deal with the extent to which team members are actually aware of one another's knowledge, but with the extent to which team members believe that other team members respect and value their expertise. Moreover, compared to TMSs, where the accuracy of team members' understanding of who knows what is very important (e.g., Austin, 2003), the accuracy of team members' beliefs about how their fellow team members see them is not the primary concern. Finally, reciprocal expertise affirmation stems from *meta*-perceptions of individual team members, whereas TMSs represent shared perceptions of who knows what (cf. Kenny, 1994).

The motivating role of reciprocal expertise affirmation

When all the members of a team believe that other members respect, value, and affirm their individual expertise, they believe that their contribution to the collective performance is recognized, which motivates them to contribute to the team task (MacPhail et al., 2009). As a result, reciprocal expertise affirmation can be expected to be essential for expertise contribution because it encourages team members to openly discuss their potential contributions and to bring in their expertise in order to come up with better and more creative solutions to team tasks. We thus argue that work teams characterized by higher levels of reciprocal expertise affirmation will be more motivated and work harder than teams with lower levels of reciprocal expertise affirmation.

However, in order to reap the benefits of this higher motivation, and to realize high team performance, the contributions of all the individual team members need to be coordinated (Rico, Sánchez-Manzanares, Gil, & Gibson, 2008; Van de Ven, Delbecq, & Koenig, 1976). Therefore, within teams, one must assign tasks to those members who are most capable of fulfilling them, and exchange information and work products with each other in a timely manner. This suggests that reciprocal expertise affirmation is a *necessary but not sufficient condition* for high levels of team performance. For a team to be successful its members must not only be motivated to contribute their individual expertise for the benefit of the team, they must also coordinate these contributions with others who are working toward the same goal (e.g., Faraj & Sproull, 2000).

An increasing number of studies in the teamwork literature has stressed the importance of shared expertise perceptions for the successful coordination of individual members' actions (e.g., Austin, 2003; Klimoski & Mohammed, 1994; Mathieu et al., 2000; Wegner, 1986). Consistent with these studies, we propose that higher levels of reciprocal

expertise affirmation will only be beneficial for team processes and outcomes if the members of the team in question have developed shared expertise perceptions. Taken together, this suggests a research model in which the relationship between reciprocal expertise affirmation and team performance is contingent on the team's sharedness of expertise perceptions, and is mediated by coordinated action – a team process variable reflecting the extent to which team members work together smoothly and without misunderstandings (Lewis, 2003; see Figure 4.1).

The Moderating Role of Sharedness of Expertise Perceptions

We define 'sharedness of expertise perceptions' as the extent to which team members agree about each other's expertise (Kenny, 1994). These shared perceptions comprise an important element of a TMS (see the section about reciprocal expertise affirmation above) (Austin, 2003). In terms of multi-level theory, sharedness of expertise perceptions is operationalized as a dispersion variable (Chan, 1998): the convergence between individual team members' perceptions represents the extent to which individuals share a common knowledge structure (Mathieu et al., 2000). The sharedness of expertise perceptions and reciprocal expertise affirmation can vary independently. Even if all the team members hold similar perceptions of one another's expertise (high sharedness), they may still *believe* that the other team members are not aware of their expertise (low expertise affirmation) or vice versa.

When expertise perceptions are shared, team members are able to efficiently use one another's knowledge and expertise. Shared expertise perceptions function as a roadmap that enables team members to identify and optimally utilize each other's expertise during task-related interactions (Bunderson, 2003). If team members are agreed about each individual team member's level of expertise, it is clear which individuals can be entrusted with a specific task and which need supervision (Liang, Moreland, & Argote, 1995). As a result, tasks and responsibilities can be more effectively and efficiently distributed among team members (Larson, Christensen, & Abbott, 1996): If team members need information, advice, or guidance, they will consult the individual about whom everyone agrees that he or she has expertise in that area (Olivera & Argote, 1999). In such conditions, higher levels of reciprocal expertise affirmation will not only result in greater motivation to contribute one's individual knowledge and expertise, these contributions will also be in tune with other members' actions (sharing information with the right person, asking the right people for advice, etc.), resulting in more coordinated action. Thus, the

higher the level of shared expertise perceptions within the team, the more reciprocal expertise affirmation will be positively related to coordinated action.

However, when expertise perceptions are not shared, team members do not agree about who knows what, and are therefore less able to efficiently use one another's knowledge and expertise. While, under such circumstances, high levels of reciprocal expertise affirmation may certainly stimulate team members' motivation to work hard and fulfill their responsibilities, the absence of shared expertise perceptions makes it more likely that team members will turn to the wrong person for information or advice, and so receive incorrect information and make more errors. As a result, unique expertise remains unused and/or certain tasks are done incorrectly, or not at all. This will especially be the case if tasks are disjunctive (Steiner, 1972) or complex (Wood, 1986), because such tasks require the input of all the team members. When the sharedness of expertise perceptions within such teams is low, higher levels of reciprocal expertise affirmation are unlikely to increase coordinated action. Consequently:

Hypothesis 1: Teams with higher levels of reciprocal expertise affirmation will report more coordinated action, but only when the sharedness of expertise perceptions is high.

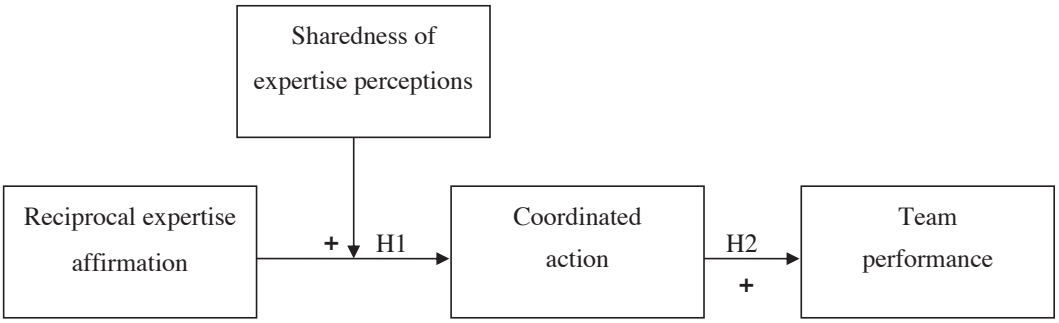
Moreover, we would expect the joint effects of reciprocal expertise affirmation and sharedness of expertise perceptions on coordinated action to have implications for team performance. For example, in management teams, financial strategies aimed at reducing costs cannot be implemented in isolation without understanding their repercussions on production, marketing, and human resource management strategies. Similarly, a marketing strategy aimed at increasing sales should not be developed without first determining if the production capacity is sufficient to meet the increased sales volume. In other words, the members of such teams need to coordinate their general activities in order to develop and formulate sound integrated business strategies. If actions are not optimally coordinated, members' individual actions will be partially or entirely wasted. This will result in redundant work, delays in production, and expertise not being used, all resulting in a lowered team performance (Kozlowski & Ilgen, 2006).

It follows that, by influencing coordinated action, reciprocal expertise affirmation and sharedness of expertise perceptions can have important implications for the performance of a team. Specifically, we would expect that team members' reciprocal expertise affirmation will be positively related to team performance when expertise

perceptions are shared, and that this effect will be mediated by the team's coordinated action. Rephrased, this results in the following hypothesis:

> *Hypothesis 2: Coordinated action mediates the interactive effect of reciprocal expertise affirmation and the sharedness of expertise perceptions on team performance in the sense that we expect an indirect and positive effect of reciprocal expertise affirmation on team performance through coordinated action for teams with high levels of shared expertise perceptions, but not for teams with low levels of shared expertise perceptions.*

Figure 4.1 Theoretical model and hypotheses



Method

Sample and task

We tested our hypotheses using data from 39 teams that competed with each other during a realistic four-week business simulation. This simulation was part of the curriculum of a Bachelor of Business Administration degree in the Netherlands. Each team worked as the senior management team of a fictitious company producing either skiing or diving equipment and worked on three fixed eight-hour days each week on the business simulation. The teams had to deal with broadly the same issues as the senior management of a real start-up company. For example, each team had to make decisions regarding its marketing strategy, its R&D budget, and its personnel reward system. As in real companies, the teams also had to prepare a financial plan, a business plan, and determine the prices of their products as well as how many products they wanted to keep in stock. Even though the tasks pertaining to each role were described clearly in the manual, the team task required constant coordinated action. For example, it would be impossible to make important R&D

decisions without consulting the financial manager. So, constant coordinated action was required for high team performance. At the end of each week, the teams had to explain their decisions and team results to the 'Supervisory Board'. This board was made up of experts from the field, mainly CEOs from Dutch companies.

Students were randomly assigned to teams. Team size ended up varying between five and seven members (M=5.95; SD=.65) as a result of unforeseen events such as illness. Together, the team members had to fulfill six predetermined roles that they distributed among themselves: general manager, financial manager, human resource manager, legal manager, commercial manager, and research and development manager. In teams with five members, the roles of commercial manager and general manager were combined, whereas in seven-person teams, the role of either the general manager or the legal manager was shared by two members. Each role involved several responsibilities and corresponding expertise domains, and was extensively described in a simulation manual so that all team members were well aware of the tasks, responsibilities, and expertise domains associated with each role. Team members shared the roles out based on individual preferences and previous expertise due to their concentration courses (for example, some students had followed more marketing courses, whereas others had chosen a more financial focus). The process of distributing roles among team members, and thus task-related expertise differentiation and development, started immediately after group formation. Each team member fulfilled the same role(s) during the entire four weeks.

All team members were required to be present at least three eight-hour days a week (i.e. on Monday, Tuesday, and Thursday). Additionally, attendance was required during specific meetings with, for example, bank representatives, and Supervisory Board members. In practice, most teams spent much more time working on the simulation than formally required because of deadlines and felt responsibility for team performance. Students were not compensated for participation; the simulation was an obligatory part of their Bachelor's program. They received course credits after fulfilling all formal course requirements.

Data collection

We gathered data using surveys from the students, and obtained team performance ratings from the members of the Supervisory Board. We also collected data regarding team members' gender, age, and nationality several days before the start of the business simulation. Of the 232 participants, 161 were male (69.4%). Participants' ages ranged from

20 to 27 with an average of 22. Except for five Germans, all the participants were Dutch. Because we were interested in the effects of reciprocal expertise affirmation, and it takes time for reciprocal expertise affirmation to develop, we decided to collect the survey data from the team members during the third week of the business simulation. This survey assessed the team's reciprocal expertise affirmation, sharedness of expertise perceptions, and coordinated action. We explicitly told students that their responses would not influence their grades in any way. Of the 232 survey forms sent out, 226 were returned (a 97.4% response rate). The Supervisory Board's ratings of the performance of each team were collected at the end of the simulation, one week later.

Measures

Reciprocal expertise affirmation was measured using a social network approach. We envisage reciprocal expertise affirmation as originating from team members' individual perceptions of expertise affirmation, but emerging as a team-level property through members' mutual interactions (Kozlowski & Klein, 2000). As is typical in network research, we used a single network question to measure this variable (see, for example, Bowler & Brass, 2006). All team members rated their fellow team members on the item "How much is this person aware of your expertise?" (1="very little" to 7="very much"). The mean R_{wg} value for these dyadic perceptions of expertise affirmation ratings was .84 suggesting that each individual team member tended to perceive his or her fellow team members in a similar way (James, Demaree, & Wolf, 1984). Therefore, we calculated the team member's mean rating of all the other team members (i.e. the "outdegree" centrality of each individual team member's dyadic responses; Wasserman & Faust, 1994). Consistent with our assumption that over time team members may come to converge in their perceptions of expertise affirmation, one-way analyses of variance showed that individual perceptions of expertise affirmation differed more between than within teams ($F[38, 188]=2.407$, $p<.0001$). The ICC(1) value of .22 indicated that a significant proportion of the total variance was accounted for by team membership. Since ICC(2) was .58, we were justified in aggregating the individual perceptions of expertise affirmation to reflect the team's reciprocal expertise affirmation.

Sharedness of expertise perceptions.[5] The sharedness of team members' expertise perceptions was also assessed using a social network approach. Specifically, all

[5] We did not focus on different expertise domains ("who knows what") because, in our sample, it was clear which member held which role. It was, therefore, more relevant whether someone had sufficient expertise to effectively

respondents rated their fellow members' level of expertise by means of the item "How much expertise concerning his or her role does this person possess?" (1="very little" to 7="very much") (M=4.91; SD=.48). From these scores, we established the extent to which team members agreed about each individual member's level of expertise with regard to the specific role they fulfilled in the team. In line with earlier research, we operationalized sharedness of expertise perceptions as the mean standard deviation of team members' scores of each other's expertise (e.g., Austin, 2003; Schneider, Salvaggio, & Subirats, 2002). The calculations resulted in a mean standard deviation reflecting the extent to which team members shared the same view of all members' expertise levels. We multiplied these values by –1 so that higher scores reflected higher levels of shared expertise perceptions. Because a derivative of the within-group variance is used as an operationalization of the higher level team construct, Chan (1998) refers to this type of higher level constructs as a dispersion variable.

Coordinated action was measured using three items adapted from Lewis (2003). The items read: "Our team works together in a well-coordinated fashion", "Our team has very few misunderstandings about what to do", and "We work together smoothly and efficiently" (1="strongly disagree" to 5="strongly agree"). Cronbach's alpha for this scale was .83. The mean R_{wg} value for coordinated action was .90. ANOVA results showed that coordinated action differed significantly between teams (F [38, 188]=2.236, p<.0001). ICC(1) was .20, and ICC(2) was .55.

Team performance was rated by the team of three external experts, referred to as the Supervisory Board. Following LePine, Colquitt, & Erez (2000) the performance criterion in this study was performance in a broad sense. During their final meeting with the Board, all management teams had to present their business results and to defend the decisions they had made throughout the simulation. After this meeting, the Supervisory Board members discussed until they agreed as a group on the overall performance of the team, and subsequently rated the teams on their overall team performance on a 10-point scale (1="extremely poor" to 10="excellent"; cf. Amason, 1996).

Control variables. We also included several control variables that prior research has identified as associated with team processes and outcomes. We measured *team size*, because larger teams may have access to more resources and may achieve greater

fulfill that role. Indeed, for the implicit coordination of tasks it was necessary that the team members agreed about the expertise level (or expertness) of each member in their role (cf. Van der Vegt, Bunderson, & Oosterhof, 2006).

efficiency by dividing the task into a greater number of sub-tasks, which may positively influence their performance. Moreover, when studying mean levels of team member characteristics, researchers have suggested that it is important to control for within-team variations (Kirkman & Shapiro, 2005). We, therefore, examined within-team dispersion regarding reciprocal expertise affirmation operationalized as the *intra-team standard deviation of reciprocal expertise affirmation*. Following the suggestion from an anonymous reviewer, we also controlled for liking among team members. *Liking* was measured with the network-item "How much would you like to have this person as a friend" (1="very little" to 5="very much") (M=4.26; SD=.67). Finally, given that research has shown that team members' overall level of expertise may be an important predictor of coordinated action and team performance (e.g., Austin, 2003) we also included the *team's mean level of perceived expertise*.

Our results indicated no significant associations between any of these covariates and coordinated action and team performance. Moreover, all analyses presented essentially identical results with and without our controls[6]. Since Becker (2005) showed that including unnecessary controls not only reduces statistical power but may also produce biased estimates and significance levels, we excluded all covariates from any further analyses and report the results of analyses without controls.

Data analysis

All our analyses were conducted at the team level of analysis. We predicted a moderated mediation or conditional indirect effect and followed the conventional procedure using an SPSS macro developed by Preacher, Rucker, & Hayes (2007). This procedure facilitates the estimation of conditional indirect effects while making use of bootstrapped confidence intervals. The most important advantage of bootstrapping is that it avoids power problems introduced by asymmetric and other non-normal sampling distributions of an indirect effect (MacKinnon, Lockwood, & Williams, 2004). We standardized all our independent variables as well as the mediator prior to the analyses (Cohen & Cohen, 1983).

Results

Descriptive statistics and intercorrelations

Table 4.1 displays the means, standard deviations (SD), and zero-order Pearson correlations of the variables outlined in the previous section. Reciprocal expertise

[6] Results can be obtained from the author.

affirmation and the team's sharedness of expertise perceptions were unrelated, which suggests that these two constructs are not only conceptually but also empirically distinct. Moreover, both reciprocal expertise affirmation and the team's sharedness of expertise perceptions were unrelated to coordinated action and team performance. As expected, coordinated action and team performance were strongly and positively related (r=.56, p<.001).

Tests of the hypotheses

Table 4.2 displays the results for our hypotheses tests. Hypothesis 1 predicted that the team's sharedness of expertise perceptions would moderate the expected positive relationship between reciprocal expertise affirmation and coordinated action. Indeed, the results show that the two-way interaction between reciprocal expertise affirmation and sharedness of expertise perceptions on coordinated action was significant (b=.65, t=4.03, p <.001).

In order to interpret this interaction, we calculated the simple slopes for reciprocal expertise affirmation at one standard deviation above and one standard deviation below the mean of sharedness of expertise perceptions (Aiken & West, 1991). As predicted, for teams with high levels of shared expertise perceptions, reciprocal expertise affirmation was positively related to coordinated action (b=.99, t=4.69, p<.001), whereas for teams with low levels of shared expertise perceptions, reciprocal expertise affirmation was unrelated to coordinated action (b=-.31, t=-1.50, *n.s.*) (see Figure 4.2). These results support Hypothesis 1.

Hypothesis 2 predicted that this moderation effect would also indirectly predict team performance through coordinated action. In order to test this, we examined the conditional indirect effect of reciprocal expertise affirmation (through coordinated action) at three values of sharedness of expertise perceptions (see middle of Table 4.2): the mean, one standard deviation above the mean (high levels of shared expertise perceptions), and one standard deviation below the mean (low levels of shared expertise perceptions). Normal-theory tests indicated that, as expected, the conditional indirect effect was positive and significant for teams with high levels of shared expertise perceptions while they did not differ significantly from zero for teams with average and low levels of shared expertise perceptions. Bootstrap confidence intervals (CIs) corroborated these results.

Preacher et al.'s (2007) moderated mediation macro also computes conditional indirect effects at various arbitrary values of the moderator that fall within the range of the

data (see the lower half of Table 4.2). This output complements the more typical probing of the interaction using one standard deviation above and below the mean, and it allowed us to identify at which values of shared expertise perceptions the significance of the conditional indirect effect becomes exactly .05. Our results demonstrated that the conditional indirect effect of reciprocal expertise became significant at any value higher than .47 on the standardized scale of shared expertise perceptions. These results support Hypothesis 2. That is, the indirect and positive effect of reciprocal expertise affirmation on team performance through coordinated action was observed for teams with high levels of shared expertise perceptions, but not for teams with low levels of shared expertise perceptions.

Table 4.1

Univariate statistics and Pearson correlations

Variables	**M**	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Team size	5.95	.65							
2 Perceived expertise affirmation (sd)	.77	.23	-.22						
3 Mean expertise level	4.91	.48	.25	.10					
4 Liking	4.26	.67	.15	.06	.52 **				
5 Reciprocal expertise affirmation	4.47	.51	.11	.14	.64 **	.78 **			
6 Sharedness of expertise perceptions	-.89	.24	.09	-.13	.03	.19	.06		
7 Coordinated action	3.51	.37	.07	.12	.34 *	.22	.32	-.11	
8 Team performance	7.42	1.25	.14	.26	.14	.13	.20	-.01	.56 **

** Correlation is significant at the .001 level (2-tailed). (n=39 teams).

* Correlation is significant at the .05 level

Table 4.2

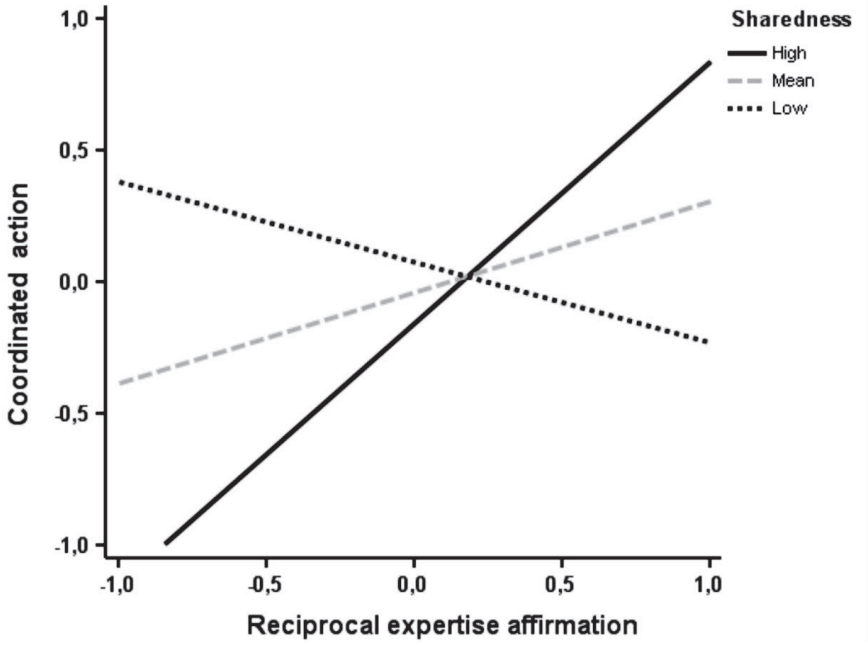
Regression results for conditional indirect effect

Predictor	***B***	***SE***	***t***	***p***
	Coordinated action			
Constant	-0.04	0.13	-0.29	.775
Reciprocal expertise affirmation (REA)	0.34	0.13	2.61	.013
Sharedness of expertise perceptions (SEP)	-0.12	0.13	-0.88	.385
REA X SEP	0.65	0.16	4.03	.001
	Team performance			
Constant	7.41	0.17	42.68	.001
Coordinated action	0.60	0.23	2.64	.013
Reciprocal expertise affirmation	0.07	0.19	0.35	.730
Sharedness of expertise perceptions	0.06	0.18	0.32	.751
REA X SEP	0.23	0.26	0.88	.385
Sharedness of expertise perceptions	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*
Conditional indirect effect at M ± 1SD				
-1 SD (-1.00)	-0.18	0.16	-1.13	.258
M (0.00)	0.21	0.14	1.52	.128
+1 SD (1.00)	0.60	0.29	2.09	.036
Sharedness of expertise perceptions[a]	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*
Conditional indirect effect at range of values of the moderator (sharedness)				
-.92	-0.15	0.15	-0.99	.321
-.69	-0.06	0.13	-0.46	.644
-.45	0.03	0.12	0.28	.783
-.22	0.12	0.12	1.02	.308
.01	0.21	0.14	1.54	.124
.24	0.30	0.17	1.82	.068
.47	0.39	0.20	1.97	.049
.70	0.48	0.24	2.05	.041
.93	0.57	0.27	2.09	.037
1.16	0.66	0.31	2.11	.035
1.39	0.75	0.35	2.12	.035

Note: n=39 teams. The unstandardized regression coefficients are reported. Bootstrap sample size=5,000.

[a] Range of values represent an abbreviation of the output provided by the macro.

Figure 4.2 Coordinated action predicted by reciprocal expertise affirmation and shared expertise perceptions. High=one standard deviation above the mean; Low=one standard deviation below the mean.



Discussion

Most important managerial, political, and military decisions are made by teams rather than by individuals. These teams address complex and ambiguous issues that involve large amounts of information and resources (Mason & Mitroff, 1981). The most critical resource of such teams is the combined expertise of all the individual team members. In order to effectively solve complex problems, members of these teams have to distinguish and acknowledge each other's expertise and coordinate their individual contributions. Only when they effectively pool their knowledge can they create team knowledge structures that are larger than the sum of all members' individual knowledge and perform optimally as a team (e.g., Faraj & Sproull, 2000).

Unfortunately, many teams do not perform as well as one would expect based on the simple sum of the expertise of all the individual team members. For several reasons, team

members may fail to contribute their expertise, resulting in suboptimal team performance (Amason, 1996). The findings of our study suggest that an important factor that may determine whether team members are motivated to effectively contribute their expertise is their reciprocal expertise affirmation. The current study replicated the findings from Chapter 3 that, at the team level of analysis, reciprocal expertise affirmation functions as a cognitive antecedent of teams' performance and that, since in teams the actions of individual team members have to be coordinated in order to achieve high overall team performance, we argued and showed that reciprocal expertise affirmation only results in high levels of team performance for teams with shared expertise perceptions, and that coordinated action mediates these effects (e.g., Klimoski & Mohammed, 1994; Wegner, 1986).

The findings of this study contribute to the teamwork literature by underlining the importance of the concept of reciprocal expertise affirmation. Although interest in cognitive determinants of team processes and performance has increased over recent decades, most research to date has focused on how variables related to social perception affect team functioning. This previous research has shown, for example, how team members' shared perceptions of team- and task-related characteristics affect implicit and explicit coordination in work teams (see, for an overview, Kozlowski & Ilgen, 2006). In the present study, we examined a distinct but important cognitive variable that influences the functioning of teams. We showed that, together with sharedness of expertise perceptions, reciprocal expertise affirmation influences a team's coordinated action and performance. These findings help to better understand the effects of shared perceptions observed in earlier team research. While some of the previous studies confirmed the theoretically predicted positive relationship between shared perceptions and team coordination and performance (e.g., Anand, Manz, & Glick, 1998; Rentsch & Woehr, 2004), other studies found no relationship (e.g., Mathieu et al., 2000), or even a negative trend (e.g., Edwards, Day, Arthur, & Bell, 2006). Interestingly, in our study, we also failed to find a direct relationship between sharedness of expertise perceptions and either coordinated action or performance (see Table 4.2). These equivocal findings suggest the importance of other variables that may influence the relationship between a team's sharedness of expertise perceptions and both coordinated action and team performance. Our findings suggest that it may be useful for team cognition research to not only focus on the effects of shared perceptions on coordination and performance, but also to acknowledge the importance of

variables, such as reciprocal expertise affirmation, that may determine whether team members are motivated to share their knowledge and expertise.

The present study naturally has both strengths and weaknesses, and the latter may warrant some caution in interpreting the results. First of all, although the use of student teams working on a four-week complex business simulation offered certain advantages in terms of access and control, particular characteristics of these teams could raise concerns about the generalizability of our findings to other team designs that are often used in practice. For example, in our setting the roles and types of expertise used were very clear as was the value and contribution of each role relative to the performance of the teams as a whole. In practice this is often less transparent or balanced for real teams working on complex problems where recognition of expertise would come in to play. Moreover, in contrast to most work teams in organizations, the teams in our sample were together for only four weeks, which may have produced a different pattern of interpersonal relationships between team members than one would observe in work teams within organizations. Also, we realize that four weeks of training do not make someone a real "expert" in the sense that he or she has the same amount of experience as someone who has fulfilled a particular role for years. In real teams people are, of course, much more identified with their expertise. However, we argue that this may even make our findings more compelling. After only a couple of weeks significant differences emerged between the teams with regard to reciprocal expertise affirmation and reciprocal expertise affirmation functioned as a strong motivational force that predicted performance processes and outcomes. Nevertheless, future research might further examine the generalizability of our findings to teams in 'real-life' organizations.

A second possible limitation of the present study concerns measurement issues. First, in line with the social network tradition (e.g., Bowler & Brass, 2006) we used single-item measures to assess our two independent variables. We opted for this approach because the demands placed on the respondents were already quite high; team members were working under time pressure and also had to report their expertise perceptions of and perceived expertise affirmation by all their fellow team members. Although some critics have argued against the use of single-item measures (Pedhazur & Schmelkin, 1991), there is a large volume of research suggesting that single-item measures can be highly reliable (e.g., Wanous & Hudy, 2001). For example, Bergkvist and Rossiter (2007) found no difference in the predictive validity of multiple-item and single-item measures of attitudes.

This is especially the case when a Round Robin design is used (which we do), because in this design every team member rates and is rated by every other team member resulting in multiple measurements and, thus, reducing error (Denissen, Geenen, Selfhout, & Van Aken, 2008; Kenny, 1994). Every peer who contributes to this measure can be seen as an item in the psychometric sense of the word. Fortunately, our interrater-reliability indices indicated sufficient consistency in individual ratings of other team members. Moreover, we developed our items carefully, reframing the underlying theoretical construct in a straightforward way, as close as possible to the definition of the construct. For this reason, we believe that the items used are valid and reliable measures of the constructs studied and that our use of single-item measures does not invalidate our conclusions.

Although a strength of the present study is that team performance was measured one week after the survey data were collected and was judged by external experts, time constraints on the part of the Supervisory Board precluded the use of anything more than a global performance assessment. Even though this overall team performance item is well-known and validated in previous research (cf. Campion, Papper, & Medsker, 1996), future research should consider measuring different aspects of team performance (see e.g., Amason, 1996). A related limitation concerns the fact that team performance was rated after the teams had presented their business results and that we cannot rule out that presentation skills, impression management, or personality may have influenced these ratings. Even though this would not invalidate our findings, it might have inflated our results and we would, therefore, suggest future research to control for such factors.

Given the paucity of empirical research into the effects of reciprocal expertise affirmation in teams, several interesting avenues for future research can be readily identified. First, we did not explicitly address the question as to whether or not the expertise perceptions of the participants in our study were accurate. Theoretically, it is quite possible that team members agree in their expertise perceptions but that they are inaccurate. While these constructs are theoretically distinguished in team cognition theory (cf. Austin, 2003) studies comparing perceptions of expertise with objective measures of it are rare because it is usually very hard to obtain objective information about individual team members' qualities. However, research does suggest that team members' perceptions of expertise are often quite accurate. Sullivan and Reno (1999), for example, found that students' actual quiz scores were strongly related with their scores as predicted by their

peers. Nevertheless, future research might benefit from clearly distinguishing and measuring both concepts.

Second, given the importance of reciprocal expertise affirmation in teams, future research might also further investigate the antecedents of reciprocal expertise affirmation. Research by Kenny (1994) shows that people often overestimate how transparent they are to others. People may generalize their beliefs about how others see them, rather than construing differential beliefs about how specific others see them. This suggests that individual perceptions of expertise affirmation by relevant others could be partly predicted by personality characteristics. Personality characteristics that may be related to such perceptions include need for approval (Leary, 1983) and self-monitoring (Snyder, 1974). Given their focus on how they are seen by others, one might expect such people to be more inclined than others to adapt their behavior to the expectations they think others may have of them. Such processes could be examined through longitudinal survey studies or video observations involving different types of teams. Additionally, it might be interesting to examine to what extent reciprocal expertise affirmation varies as a result of task characteristics. One could, for example, imagine that team members develop more dyad-specific perceptions of expertise affirmation of those members with whom they frequently interact or with whom they are task and/or outcome interdependent (Van der Vegt, Van de Vliert, & Oosterhof, 2003).

Third, previous research highlighted the effects of an individual's perception of perceived expertise affirmation on individual-level processes and outcomes. In a team context, with the passage of time and as a result of social influence processes, team members may become more familiar with their teammates' thought patterns (e.g., Harrison, Price, Gavin, & Florey, 2002), thereby increasing reciprocal expertise affirmation. Since our study shows that reciprocal expertise affirmation is related to team performance it becomes interesting to study the development and dynamics of reciprocal expertise affirmation in teams by means of longitudinal studies. Such research may, for example, give directions to interventions to improve team development or to interventions that facilitate the socialization of newcomers.

Finally, our study examined inter-team differences in reciprocal expertise affirmation and their implications for team-level functioning and effectiveness. However, in team research it is not only important to look at team-level processes and outcomes, but also to examine lower-level processes and outcomes occurring in a team context because

they may sometimes indicate similar or different patterns of relationships across levels of analysis (cf. Chen, Thomas, & Wallace, 2005; Sonnentag & Volmer, 2010). Because team members' perceptions of expertise affirmation are fundamentally relational phenomena, it would be especially interesting to take a closer look at the origin and effects of these variables at the dyad level of analysis. It might be interesting, for example, to examine whether individuals are especially likely to help those team members whom they think are most aware of their expertise and how, in turn, this affects individual and team performance.

Although much work still needs to be done, the results of the present research may have practical implications. First of all, our results suggest that teams will function best when reciprocal expertise affirmation is high and the team has developed shared perceptions of expertise. Therefore, it is important to assess both factors before planning an intervention to improve team processes and output. Reciprocal expertise affirmation could be enhanced by cross-training since this teaches team members the specific tasks and content of each member's roles. In this way, team members experience the problems each one of them encounters while performing their tasks. As a result, team members may believe that their fellow members are better able to judge their strengths and weaknesses, thus enhancing reciprocal expertise affirmation. The team leader might also be in a position to facilitate an increase in reciprocal expertise affirmation. For example, transformational leaders (e.g., Podsakoff, MacKenzie, Moorman, & Fetter, 1990) give all team members individual support and feedback. If this were to happen in a team setting, in which all members' qualifications were openly discussed, this could increase team members' mutual recognition that others are aware of their expertise.

Second, research has shown that, over time, team members' expertise perceptions of each other do not necessarily become more shared (e.g., Levesque, Wilson, & Wholey, 2001). However, it may be relatively easy to increase the sharedness of expertise perceptions; this will occur if team members have the opportunity to learn about each other's expertise through frequent interactions. Task and outcome interdependence between team members have been shown to increase the extent to which team members interact and help each other (Van der Vegt et al., 2003). Therefore, team leaders might tune these task characteristics in order to improve the sharedness of expertise perceptions. The reverse intervention, however, may also be an option. Take away the interdependence among workers and the absence of sharedness of expertise perceptions will no longer

seriously damage the team performance outcomes. In that case one may, of course, question if, in terms of Hackman (2002), one can still speak of a 'real team'. Task interdependence among workers can be reduced by assigning broader tasks to individuals.

A final implication for practice may be an additional encouragement to support the socialization of newcomers by consciously helping them catch up with the old-timers' knowledge about one another. It also seems important to make newcomers believe that the other team members are being made aware of their expertise. For example, the team leader could intervene during team meetings by explaining how newcomers' expertise relates to that of the old-timers and what previous experience a newcomer has. Of course, newcomers may also present themselves during a meeting.

Conclusion

To conclude, our study replicates the finding from Chapter 3 that reciprocal expertise affirmation is an important cognitive variable for teamwork. In team settings the actions of individual team members have to be coordinated in order to achieve high overall team performance. Our findings showed that reciprocal expertise affirmation only results in high levels of team performance if team members share expertise perceptions, and that coordinated action mediates this interactive effect.

CHAPTER 5

GENERAL DISCUSSION

In spite of the importance of meta-perceptions – i.e. people's beliefs of how others see them (Kenny, 1994) – as determinants of people's behavior, little attention has been paid to meta-perceptions in work settings. More specifically, a review of the empirical meta-perception literature in Chapter 1 revealed three gaps. First, research on meta-perceptions in a *work setting* and especially in *work teams*, is scarce. Second, the *content* of meta-perceptions mostly refers to (pathopsychological) personality or stereotypes, but seldom to task-related characteristics. Third, little structural empirical knowledge exists regarding the *effects* of meta-perceptions. Because of these voids and the trend in the last decennia for organizations to organize work around teams (e.g., Devine, Clayton, Philips, Dunford, & Melner, 1999), the present dissertation focused on the role of task-related meta-perceptions in work teams. In work teams, expertise is the most important task-related resource (Faraj & Sproull, 2000) as well as a crucial positive aspect of team members' work identity (Van der Vegt & Bunderson, 2005). Therefore, and because research has suggested that the affirmation of positive identities is a crucial motivational force (e.g., Dutton, Roberts, & Bednar, 2010), I zoomed in on perceived expertise affirmation – i.e. the belief that one's expertise is recognized and acknowledged by one's fellow team members.

In this final chapter I reflect on the findings regarding this construct, on its development, and on its consequences at both the individual as well as the team level of analysis. In the following, I first describe the main findings of the three empirical studies reported in Chapters 2, 3, and 4. Next, I discuss the theoretical implications that can be derived from the findings of these studies. Subsequently, I address the strengths and limitations of the present research and offer some suggestions for future research. I finish with practical implications and some concluding remarks.

Summary of the Main Findings

The results of the three empirical studies in this dissertation can be summarized in four main findings. First, the present research suggests that perceived expertise affirmation is a valid multi-level construct that is relevant in team settings at both the individual (perceived expertise affirmation) as well as the team level of analysis (reciprocal expertise affirmation). Second, these empirical findings shed light on the development of perceived expertise affirmation by identifying two individual-level antecedents (educational background similarity and relative expertise) and two team-level antecedents (team size

and team longevity). Third, these findings show that both perceived expertise affirmation and reciprocal expertise affirmation are positively related to individual performance. Fourth, reciprocal expertise affirmation is conditionally positively related to team performance; this relationship is contingent on the team's sharedness of expertise perceptions and is mediated by coordinated action. The empirical findings of the present dissertation are graphically summarized in Figure 5.1.

Finding 1: Perceived expertise affirmation is a valid multi-level construct

In order to be able to examine the development and consequences of perceived expertise affirmation and reciprocal expertise affirmation it was important to first develop a measure. Therefore, in Chapter 2, I spent ample time to develop and validate a measure using the framework of Chen, Mathieu, and Bliese (2004) for multi-level construct validation. The findings from Chapter 2 confirmed the idea that in addition to differences in perceived expertise affirmation between individuals, meaningful differences *between teams* emerge in the belief that expertise is affirmed by fellow members –i.e. *reciprocal expertise affirmation* (cf. MacPhail, Roloff, & Edmondson, 2009). This emergence of a higher level team-construct out of individual team members' perceptions of expertise affirmation was replicated in Chapters 3 and 4 using other samples. The fact that these samples varied from student teams working on a four-week business simulation to employees from organizational work teams from a wide range of industry sectors makes this finding especially robust. This replication in two other samples suggests that the development of perceived expertise affirmation and reciprocal expertise affirmation can be expected to occur in different types of team contexts.

Chapter 2 also provided evidence that perceived expertise affirmation and reciprocal expertise affirmation are unique constructs that can be theoretically and empirically distinguished from related constructs at the individual level (self-efficacy and team-based self-esteem), and team level of analysis (credibility and psychological safety). This partial nomological network confirmed the convergent and divergent validity of perceived and reciprocal expertise affirmation and paved the way for the study of their antecedents and consequences of in Chapters 3 and 4.

Finding 2: Individual and team-level development of expertise affirmation beliefs

After establishing a valid measure of the focal construct, I proceeded with the next step: examining its antecedents. Chapter 3 provides some insight into how expertise affirmation beliefs develop at two levels of analysis. I argued that educational background

similarity would increase perceived expertise affirmation through heightened levels of interaction (e.g., Chatman, Polzer, Barsade, & Neale, 1998) and felt transparency (Frey & Tropp, 2006). Relative expertise, as a proxy of status (Berger, Cohen, & Zelditch, 1972), was argued to increase team members' visibility and speaking time (e.g., Shelly & Troyer, 2001), and, in turn, the extent to which they think fellow members are aware of their expertise. At the individual level of analysis, I indeed found that educational background similarity and relative expertise were positive predictors of perceived expertise affirmation.

In Chapter 3 I also identified two team-level antecedents. Team size was a negative predictor of reciprocal expertise affirmation, whereas team longevity was a positive predictor. So, opportunities for team members to learn about each other's strengths and weaknesses, whether it be due to more time, or more intense contact due to a smaller team, seem crucial for the development of reciprocal expertise affirmation. However, I also included team size as a control variable in Chapter 4, and did not replicate the negative relationship between team size and reciprocal expertise affirmation (see Table 4.1.). One explanation for this may be the small differences in team size in the sample I used in Chapter 4. That is, in the latter sample the sizes of the teams were all between five and seven members (M=5.95; SD=.65), whereas in the sample in Chapter 3, team sizes varied between three and twenty members. Even though the average team size is almost the same for both samples (M=6.07) the standard deviation in the Chapter 4 sample is more than 5 times as high (SD=3.19). Unfortunately, it was not possible to test for the effect of longevity in Chapter 4, because teams in this sample were all created at the same time, and all worked together for four weeks. In conclusion, in Chapter 3, a number of important antecedents of perceived expertise affirmation and reciprocal expertise affirmation were identified.

Finding 3: Consequences for individual performance

One of the main goals of this dissertation was to examine whether people's beliefs that their fellow team members affirm their expertise indeed have positive implications for their individual performance. The findings in Chapter 3 confirmed this expectation suggesting that perceived expertise affirmation is a strong motivational force in work teams. Moreover, over and above the direct positive relationship between perceived expertise affirmation and individual team member performance, reciprocal expertise affirmation also positively predicted individual team member's performance. This important finding underlines the idea that, even though individual and reciprocal expertise

affirmation are positively related, because the basis for the latter lies in the perceptions of the individual members, both constructs may nevertheless vary independently and independently predict individual member's performance.

Finding 4: Reciprocal expertise affirmation and team performance

The empirical findings in Chapter 3 show that, as predicted, reciprocal expertise affirmation was positively related to team performance, but only in teams with high levels of shared expertise perceptions. These findings suggest that the implications of expertise affirmation beliefs for team performance are less straightforward than those for individual performance. High team performance requires that individual contributions to the collective are somehow coordinated (Rico, Sánchez-Manzanares, Gil, & Gibson, 2008; Van de Ven, Delbecq, & Koenig, 1976). The findings from Chapter 3 suggest that sharedness of expertise perceptions can function as such a coordination mechanism and help team members to align their individual efforts and perform optimally as a team. As a result, reciprocal expertise affirmation only enhances team performance if the team members have shared perceptions of each other's' expertise. This interactive effect was replicated in Chapter 4. Moreover, I extended this finding by showing that the joint effects of teams' reciprocal expertise affirmation and sharedness of expertise perceptions on team performance were mediated by coordinated action. These findings suggest that teams not only need hard-working team members, due to reciprocal expertise affirmation, but also an implicit coordination mechanism to align individuals' contributions toward the same goal and that this combination results in higher level of team performance through coordinated action (e.g., Faraj, & Sproull, 2000).

Theoretical Implications

The main goal of the present dissertation was to examine the role of meta-perceptions in work settings by focusing on a specific type of meta-perceptions: perceived expertise affirmation in work teams. The results of the three empirical studies I conducted have a number of theoretical implications for research and theory building regarding the role of meta-perceptions of expertise in work teams.

First of all, the results presented in the three studies demonstrate the importance of task-related meta-perceptions in work teams. It is surprising how little research has thus far focused on such meta-perceptions at work, let alone in work teams. The present research answers calls from MacPhail et al. (2009) to study perceived expertise affirmation in work teams. By developing a scale of perceived and reciprocal expertise affirmation I

hope to stimulate future research on this topic. Moreover, the development of a partial nomological network and the identification of a number of key antecedents is an important initial step for future research.

Second, the empirical studies in the present dissertation consistently suggest that meta-perceptions have important implications for the functioning and performance of work teams. These findings corroborate theory in a relatively new branch of literature that underlines the importance of recognition of positive identities at work for employees' motivation (e.g., Dutton et al., 2010). Unfortunately, this literature is still of a largely theoretical nature. The findings in the present dissertation show that it is important to adopt a multi-level approach when empirically studying positive identities at work. This is in line with, for example, Ashforth, Rogers, & Corley (2011) who argue that at the individual level, identity addresses psychological motives such as learning about the self, maintaining integrity between self and behavior, and attaining a positive sense of self. In contrast, at the group level, identity has been argued to define the group and differentiate it from relevant other groups, providing a foundation for member commitment to the group and action on behalf of the group (e.g., Haslam & Ellemers 2005). The differences I found in the development of and consequences of perceptions of expertise affirmation at two levels of analyses, may signal different affirmation processes of positive identity (such as expertise). For example, members of a project team may develop a sense of affirmation of "who we are" as a team (e.g., "in this team members are aware of each other's' expertise"), while simultaneously constructing a sense of affirmation of "who I am" (e.g., fellow team members are aware of my expertise"). With the present dissertation I have tried to show that explicitly distinguishing between the individual and the team level can function as a starting point for theory and studies to further the knowledge of the importance of positive identities for team work.

Third, even though a growing number of studies in the last decades has focused on cognitive predictors of team performance such as shared mental models and transactive memory (see Kozlowski & Ilgen, 2006 for an overview), the potential effects of meta-perceptions have been mainly ignored. Shared mental models and transactive memory are important in helping team members coordinate their actions and to give insight into knowledge systems within teams. However, these cognitive constructs do not account for the potential motivational force inherent in cognition. The findings of the present dissertation suggest that expertise affirmation beliefs may be strong motivators in teams.

Therefore, it may be useful for team cognition research to acknowledge the importance of other cognitive variables in predicting team functioning, such as meta-perceptions, that may determine whether team members are motivated to share their knowledge and expertise (Oosterhof, Van der Vegt, Van de Vliert, & Sanders, 2009).

Strengths, Limitations and Future Research

The present dissertation has several strengths that reinforce the findings I discussed above. First, an important strength of the present dissertation is the fact that I conducted studies in field settings as well as in a more controlled environment. This supports the generalizability of the findings and increases their external validity. Second, to prevent common source variance, I gathered data from different sources (e.g., demographics, peer ratings, self-reports, and supervisor ratings). Third, in all three studies I measured the study variables at different points in time. This temporal separation of the measurement of the predictor and criterion variables minimized artificial covariation between our study variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). A final strength is the high response rate in all three studies which minimizes selection biases in the study participants.

As with any research, the present dissertation also has a number of weaknesses. For the specific limitations of the empirical studies, I refer to the relevant chapter. Below, I will mention three overall limitations. First of all, even though a number of key variables and antecedents were addressed in relation to the focal construct at both levels of analysis, research on expertise affirmation beliefs is still in its infancy. Further efforts should focus on an elaboration of the nomological network of expertise affirmation beliefs at both levels of analysis. At the individual level of analysis it would be interesting to examine a number of personality variables. For example, one could expect that perceived expertise affirmation has stronger effects for people with a high need for approval (Leary, 1983) or who score high on self-monitoring (Snyder, 1974) because of their focus on how they are seen by others. One might expect such people to be more inclined than others to adapt their behavior to the expectations they think others may have of them. Additionally, it might be interesting to empirically distinguish reciprocal expertise affirmation from other cognitive team constructs such as transactive memory systems (Wegner, 1986) or types of team climates such as collective efficacy (Stajkovic, Lee, & Nyberg, 2009).

A second limitation is the fact that even though the antecedents were related to the focal construct in the hypothesized direction, the underlying mechanisms have not been

empirically examined. For example, the argumentation that in larger teams there would be less interpersonal interaction and information exchange (Williams & O'Reilly, 1998) and lower visibility of individual contributions to the group product (Kameda, Stasson, Davis, Parks, & Zimmerman, 1992) is speculative. Also the team-level processes through which reciprocal expertise may enhance team performance under certain conditions require more attention in future research. One could, for example, expect that in teams with high levels of reciprocal expertise affirmation psychological safety is more likely to arise, facilitating discussions in which members bring their expertise to bear, share problems and mistakes and try to help each other with advice or creative solutions (cf. MacPhail et al., 2009). However, this explanation, too, requires additional testing.

Third, even though the overall conceptual model in Figure 5.1. suggests a mediational effect of perceived expertise affirmation and reciprocal expertise affirmation, this was not examined in the present dissertation. The reason for this omission is that most the antecedents of perceived expertise affirmation and reciprocal expertise affirmation we examined (educational background similarity, team longevity, and team size) are theoretically rather remote from performance, and there is no theoretical reason to assume a clear relationship. In future research it might be interesting to examine a number of antecedents that are theoretically closer to individual and/or team performance in order to gain more insight in the relevant processes.

Fourth, I only examined one aspect of a person's positive identity affirmation, namely his or her expertise. However, expertise may not always be the most salient individual characteristic to a person. For example, someone may find it more important that others affirm his or her warmth or interpersonal competences. Imagine an engineering team in which someone performs well, and thinks that others are aware of his task-related expertise. However, he may not feel valued as a person because he is never invited to the annual barbecue night of one of the members. Even though this team member may believe that his expertise is affirmed he may feel that he is just not fully part of the team. It would be interesting for future research to examine which individual characteristics people find the most important dimensions to be affirmed by their fellow team members and subsequently ask to what extent this is the case. Moreover, Felson (1985) established that the influence of meta-perceptions on the self may be different depending upon the type of identity that is activated. He showed that for schoolchildren, meta-perceptions that were

related to the children's evaluation by peers (e.g., physical attractiveness) affected their self-view much more than other types of meta-perception (e.g., academic achievement).

Fifth, the designs of the three empirical studies in the present dissertation were of a cross-sectional nature and did not allow us to explicitly test the direction of causality of the proposed relationships. The relationship between individual perceived expertise affirmation and supervisor-rated individual performance, for example, could be opposite to what I have suggested. It is possible that individual team members may report higher levels of perceived expertise affirmation *after* they receive positive performance evaluations from their supervisors. Alternatively, and perhaps even more realistically, reciprocal relationships may exist between the study variables. A longitudinal research design in which the variables of interest are all measured at two or more periods in time is needed to address such issues. If possible, further studies should also use additional methods that complement ours. It might be interesting to conduct several studies in a laboratory setting to examine the underlying mechanisms that drive the effects of expertise affirmation beliefs. This will help to gather more detailed knowledge regarding the underlying processes within groups or between individuals regarding the development and effects of perceptions of expertise affirmation. For example, an experiment will allow for the manipulation of different task characteristics such as task interdependence or task complexity to see under which conditions the development of expertise affirmation beliefs is fastest. It might be, for example, that complex tasks require more interactions between individual team members and that this speeds-up the development of perceived expertise affirmation and reciprocal expertise affirmation.

Practical Implications

The findings reported in the present dissertation have implications for how practitioners may effectively manage teams. First, in order to increase individual performance of team members it seems important to heighten the levels of expertise affirmation beliefs for individuals as well as for teams as a whole. Managers can fulfill an important role in the development of a team climate, for example by encouraging team members to speak up and give short presentations of their relevant specialized knowledge for a specific team goal. The team leader may also stress the importance of clarification during team discussions and problem solving. For example, transformational leaders (e.g., Podsakoff, MacKenzie, Moorman, & Fetter, 1990) can give all team members individual support and feedback. If this happens in a team setting, in which all members' qualifications

are openly discussed, this could increase team members' mutual recognition that others are aware of their expertise. Another potential interesting way is for leaders to take on the role of mediators in teams to help clear up misunderstandings, mediate conflict, and translate specialist jargon. Okhuysen and Eisenhardt (2002) found that teams were more likely to use and combine knowledge effectively when formal interventions encouraged team members to ask questions about one another's knowledge.

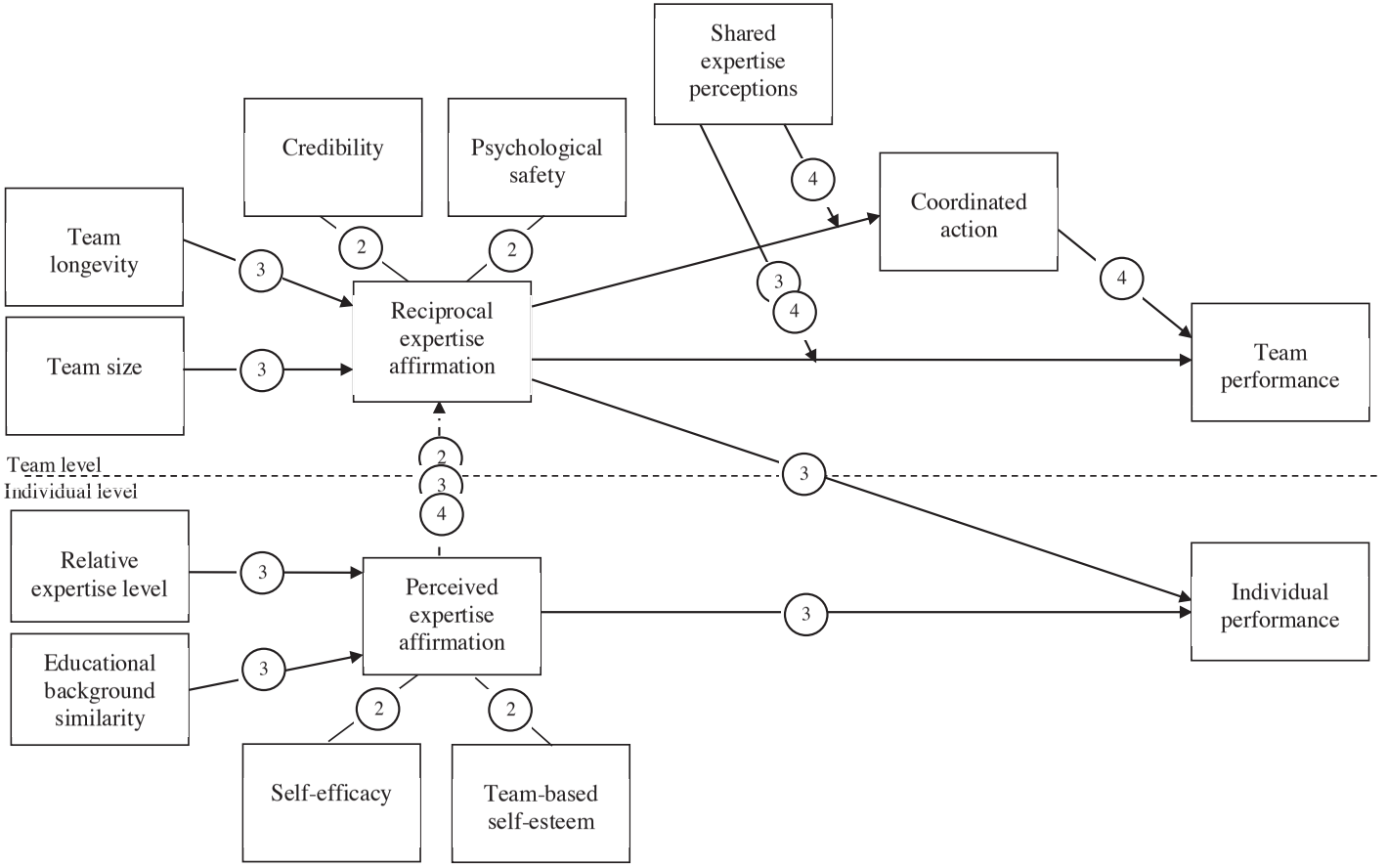
Finally, some tools and interventions may help to increase reciprocal expertise affirmation. Interventions such as cross-training and team building activities may ease team members' evaluative concerns (see Gaertner et al., 1999). Also, one may consider interventions aimed at stressing unique individual skills while making clear how these are indispensable for team performance as a whole. Team meetings in which all members have time to discuss their strengths and weaknesses in relevant domains and how these are related to the team tasks and outcomes may be useful in this regard. One could do so by using visualization techniques such as mind-maps and sticky notes. Also, teams may create a "community" on intranet in which members keep a log of their progress, their successes and the problems they encounter. For example, an engineering team working on calculations for a bridge may post comments about the assumptions they used regarding the forces this bridge would encounter in the future (wind/rain strain etc.). Other employees can jump in and add their remarks. All comments and advice are tracked chronologically, by subject and date. This can give team members a sense of visibility of their contributions, increasing their expertise affirmation beliefs. Such interventions may increase the development of a climate of reciprocal expertise affirmation within a team. However, future research should first address which interventions actually increase reciprocal expertise affirmation.

CONCLUDING REMARKS

This dissertation started with an example of the importance of people's beliefs of whether others are aware of their task-related knowledge, skills and abilities in teams. In spite of anecdotal evidence, little research had empirically examined the development and consequences of these beliefs for team work. The multi-level approach in the three empirical studies that I conducted, provide support that this so-called perceived expertise affirmation is important for individual performance as well as team performance. This dissertation was a first step in examining if, how, and when such beliefs of expertise affirmation influence the performance of individual employees and teams as a whole. In the

realm of organizational behavior, the findings of the present dissertation support the notion that researchers as well as managers may need to focus on the individual and team-level simultaneously for making optimal use of the power of expertise affirmation beliefs in work teams.

Figure 5.1 Overall conceptual model



Note: The boxes represent study variables, the arrows represent hypothesized directional relationships, and the lines represent hypothesized correlational relationships. The numbers refer to the chapter(s) in which the relationship was examined.

REFERENCES

Adarves-Yorno, I., Postmes, T., & Haslam, S.A. (2006). Social identity and the recognition of creativity in groups. *British Journal of Social Psychology, 45*, 479-497.

Aiken, L.S. & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions.* London: Sage.

Albright, L., Forest, C., & Reiseter, K. (2001). Acting, behaving, and the selfless basis of metaperception. *Journal of Personality and Social Psychology, 81*, 910-921.

Albright, L. & Malloy, T.E. (1999). Self-observation of social behavior and metaperception. *Journal of Personality and Social Psychology, 77,* 726-734.

Amason, A.C. (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for topmanagement teams. *The Academy of Management Journal, 39,* 123-148.

Anand, V., Manz, C.C., & Glick, W.H. (1998). An organizational memory approach to information management. *The Academy of Management Review, 23*, 796-809.

Ashforth, B.E. & Kreiner, G.E. (1999). "How can you do it?": Dirty work and the challenge of constructing a positive identity. *The Academy of Management Review*, *24*, 413-434.

Ashforth, B.E. & Mael, F. (1989). Social identity theory and the organization. *The Academy of Management Review, 14*, 20-39.

Ashforth, B.E., Rogers, K.M., & Corley, K.G. (2011). Identity in organizations: Exploring cross-level dynamics. *Organization Science, 22*, 1144-1156.

Austin, O.J.R. (2003). Transactive memory in organizational groups: The effects of content, shared cognition, specialization, and accuracy on group performance. *Journal of Applied Psychology, 88*, 866-878.

Baard, P.P., Deci, E.L., & Ryan, R.M. (2004). Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal of Applied Social Psychology, 34*, 2045-2068.

Back, M.D., Krause, S., Hirschmüller, S., Stopfer, J.M., Egloff, B., & Schmukle, S.C. (2009). Unraveling the three faces of self-esteem: A new information-processing sociometer perspective. *Journal of Research in Personality, 43*, 933-937.

Baer, M. & Frese, M. (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovations, and firm performance. *Journal of Organizational Behavior, 24*, 45-68.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*, 117-148.

Barrick, M.R., Stewart, G. L., Neubert, M.J., & Mount, M.K. (1998). Relating member ability and personality to work-team processes and team effectiveness. *Journal of Applied Psychology, 83*, 377-391.

Barsade, S.G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly, 47*, 644-675.

Baumeister, R.F. & Tice, D.M. (1990). Anxiety and social exclusion. *Journal of Social and Clinical Psychology, 9*, 165-195.

Becker, T.E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods, 8*, 274-289.

Bellmore, A.D. & Cillessen, A.H.N. (2003). Children's meta-perceptions and meta-accuracy of acceptance and rejection by same-sex and other-sex peers. *Personal Relationships, 10,* 217-233.

Berger, J., Cohen, B. P., & Zelditch, M. Jr. (1972). Status characteristics and social interaction. *American Sociological Review, 37*, 241-255.

Bergkvist, L. & Rossiter, J.R. (2007). The predictive validity of multiple-item versus single- item measures of the same constructs. *Journal of Marketing Research, 44*, 175-184.

Bernstein, M.J., Sacco, D.F., Young, S.G., Cook, E., & Hugenberg, K. (2010). Being 'in' with the in-crowd: The effects of social exclusion and inclusion are enhanced by shared ingroup status. *Personality and Social Psychology Bulletin, 36*, 999-1009.

Bettencourt, B.A. & Sheldon, K. (2001). Social roles as mechanisms for psychological need satisfaction within social groups. *Journal of Personality and Social Psychology, 81*, 1131- 1143.

Bliese, P.D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. Klein & S. Kozlowski (Eds.), *Multi-level theory, research and methods in organizations.* (pp. 349-381). San Francisco: Jossey-Bass.

Bowler, W.M. & Brass, D.J. (2006). Relational correlates of interpersonal citizenship behavior: A social network perspective. *Journal of Applied Psychology, 91,* 70-82.

Brehm, S.S., Miller, R.S., Perlman, D., & Campbell, S.M. (2002). *Intimate relationships*. Boston: McGraw-Hill.

Brewer, M.B. (2003). Optimal distinctiveness, social identity, and the self. In M. Leary & J. Tangney (Eds.), *Handbook of self and identity.* (pp. 480-491). New York: Guilford.

Brewer, M.B. & Gardner, W. (1996). Who is this "we"? Levels of collective identity and self-representations. *Journal of Personality and Social Psychology, 71*, 83-93.

Bunderson, J.S. (2003). Recognizing and utilizing expertise in work groups: a status characteristics perspective. *Administrative Science Quarterly, 48*, 557-591.

Butz, D.A. & Plant, E.A. (2006). Perceiving outgroup members as unresponsive: Implications for approach-related emotions, intentions, and behavior. *Journal of Personality and Social Psychology, 91*, 1066-1079.

Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.

Cabrera, A. & Cabrera, E.F. (2002). Knowledge-sharing dilemmas. *Organization Studies, 23*, 687-710.

Cacioppo, J.T. & Petty, R.E. (1982). The need for cognition. *Journal of Personality and Social Psychology, 42*, 116-131.

Campion, M.A., Papper, E.M., & Medsker, G.J. (1996). Relations between work team characteristics and effectiveness: A replication and extension. *Personnel Psychology. 49,* 429-452.

Cannon-Bowers, J.A., Salas, E., & Converse, S.A. (1993). Shared mental models in expert decision-making teams. In N.J. Castellan, Jr. (Ed.), *Current issues in individual and group decision making.* (pp. 221-246). Hillsdale, NJ: Lawrence Erlbaum Associates.

Carlson, E.N. & Furr, R.M. (2009). Evidence of differential meta-accuracy: People understand the different impressions they make. *Psychological Science, 20*, 1033-1039.

Carlson, E.N., Vazire, S., & Furr, R.M. (2011). Meta-insight: Do people really know how others see them? *Journal of Personality and Social Psychology, 101*, 831-846.

Carlson, E.N., Vazire, S., & Oltmanns, T.F. (2011). You probably think this paper's about you: Narcissists' perceptions of their personality and reputation. *Journal of Personality and Social Psychology, 101*, 185-201

Carroll, G.R. & Harrison, J.T. (1998). Organizational demography and culture: Insights from a formal model and simulation. *Administrative Science Quarterly, 43*, 637-667.

Chan, D. (1998). Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology, 83,* 234-246.

Chatman, J.A., Polzer, J.T., Barsade, S.G., Barsade, S.G., & Neale, M.A. (1998). Being different yet feeling similar: The influence of demographic composition and organizational culture on work processes and outcomes. *Administrative Science Quarterly, 43*, 749-780.

Chen, G., Mathieu, J.E., & Bliese, P.D. (2004). A framework for conducting multilevel-construct validation. *Research in Multi-Level Issues, 3*, 273-303.

Chen, G., Thomas, B., & Wallace, J.C. (2005). A multilevel examination of the relationships among training outcomes, mediating regulatory processes, and adaptive performance. *Journal of Applied Psychology, 90*, 827-841.

Clement, R.W. & Krueger, J. (2002). Social categorization moderates social projection. *Journal of Experimental Social Psychology, 38*, 219-231.

Cohen, J. & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences.* Hillsdale, NJ: Erlbaum.

Coie, J.D., Terry, R., Zakriski, A., & Lochman, J.E. (1995). Early adolescent social influences on delinquent behavior. In McCord, J. (Ed.), *Coercion and punishment in long-term perspectives.* (pp. 229-244). Cambridge University Press: New York.

Cook, W.L. & Douglas, E.M. (1998). The looking-glass self in family context: A social relations analysis. *Journal of Family Psychology, 12*, 299-309.

Corcoran, K.J. (1996). The influence of gender, expectancy, and partner beverage selection on (meta)perceptions in a ''blind'' dating situation. *Addictive Behaviors, 21*, 273-282.

Corcoran, K.J. & Michels, J.L. (1997). What will you think of me if I drink with you? Situational influences on metaperceptions. *Journal of Child and Adolescent Substance Abuse, 7*, 75-86.

Cornelissen, J.P., Haslam, S.A., & Balmer, J.M.T. (2007). Social identity, organizational identity and corporate identity: Towards an integrated understanding of processes, patternings and products. *British Journal of Management, 18*, 1-16.

Dansereau, F. & Yammarino, F. (2000). Within and between analysis: The varient paradigm as an underlying approach to theory building and testing. In K. Klein & S. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions.* (pp. 425-466). San Francisco: Jossey-Bass.

De Jong, P.J. & Peters, M. (2005). Do blushing phobics overestimate the undesirable communicative effects of their blushing? *Behaviour Research and Therapy, 43*, 747-758.

De Jong, P.J., Peters, M.L., Dijk, C., Nieuwenhuis, E., Kempe, H., & Oelerink, J. (2006). Fear of blushing: The role of the expected influence of displaying a blush on others' judgments. *Cognitive Therapy and Research, 30*, 623-634.

Denissen, J.J.A., Geenen, R., Selfhout, M., & Van Aken, M.A.G. (2008). Single-item big five ratings in a social network design. *European Journal of Personality, 22*, 37-54.

Devine, D.J., Clayton, L.D., Philips, J.L., Dunford, B.B., & Melner, S.B. (1999). Teams in organizations: Prevalence, characteristics, and effectiveness. *Small Group Research, 30*, 678-711.

De Waal-Andrews, W. & van Beest, I. (2012). When you don't quite get what you want: Psychological and interpersonal consequences of claiming inclusion. *Personality and Social Psychology Bulletin, 38*, 1367-1377.

Dijk, C. & de Jong, P.J. (2009). Fear of blushing: No overestimation of negative anticipated interpersonal effects, but a high-subjective probability of blushing. *Cognitive Therapy and Research, 33*, 59-74.

Dijkstra, P. & Barelds, D.P.H. (2011). Women's meta-perceptions of attractiveness and their relations to body image. *Body Image, 8*, 74-77.

Dutton, J.E., Roberts, L.M., & Bednar, J. (2010). Pathways for positive identity construction at work: Four types of positive identity and the building of social resources. *The Academy of Management Review, 35,* 265-293.

Edmondson, A.C. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*, 350-383.

Edwards, B.D., Day, E.A., Arthur, W.Jr., & Bell, S.T. (2006). Relationships among team ability composition, team mental models, and team performance. *Journal of Applied Psychology, 91,* 727-736.

Elfenbein, H.A., Eisenkraft, N., & Ding, W.W. (2009). Do we know who values us? Dyadic

meta-accuracy in the perception of professional relationships. *Psychological Science, 20*, 1081-1083.

Ellemers, N., Kortekaas, P., & Ouwerkerk, J.W. (1999). Self-categorization, commitment to the group and group self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology, 29*, 371-389.

Elliot, A.J. & Harackiewicz, J.M. (1996). Approach and avoidance goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology, 70*, 461-475.

Ericsson, K.A. (1996). The acquisition of expert performance: An introduction to some of the issues. In K.A. Ericsson (Ed.), *The road to excellence: The acquisition of expert performance in the arts and sciences, sports, and games.* (pp. 1-50). Mahwah, NJ: Erlbaum.

Faraj, S. & Sproull, L. (2000). Coordinating expertise in software development teams. *Management Science, 46,* 1554-1568.

Felson, R.B. (1985). Reflected appraisal and the development of self. *Social Psychology Quarterly,* 48, pp. 71-78.

Frey, F.E. & Tropp, L.R. (2006). Being seen as individuals versus as group members: Extending research on metaperception to intergroup contexts. *Personality and SocialPsychology Review, 10,* 265-280.

Gagné, P.E. & Hancock, G.R. (2006). Measurement model quality, sample size, and solution propriety in confirmatory factor models. *Multivariate Behavioral Research*, *41*, 65-83.

Gaertner, S.L., Dovidio, J.F., Rust, M.C., Nier, J.A., Banker, B.S., Ward, C.M., Mottola, G.R., & Houlette, M. (1999). Reducing intergroup bias: Elements of intergroup cooperation. *Journal of Personality and Social Psychology, 76*, 388-402.

Gibson, C.B. & Vermeulen, F. (2003). A healthy divide: Subgroups as a stimulus for team learning behavior. *Administrative Science Quarterly, 48,* 202-239.

Gibson, C.B., Zellmer-Bruhn, M.E., & Schwab, D.P. (2003). Team effectiveness in multinational organizations: Evaluation across contexts. *Group and Organization Management, 28*, 444-474.

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ.* New York: Bantam Books.

Hackman, J.R. (1992). Group influences on individuals in organizations. *Handbook of*

Industrial and Organizational Psychology, *3*, 199-267.

Hackman, J.R. (2002). *Leading teams: Setting the stage for great performances.* Boston: Harvard Business School Press.

Harrison, D.A. & Klein, K.J. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *The Academy of Management Review, 32* 1199-1228.

Harrison, D.A., Price, K.H., & Bell, M.P. (1998). Beyond relational demography: Time and the effects of surface- and deep-level diversity on work group cohesion. *The Academy of Management Journal, 41,* 96-107.

Harrison, D.A., Price, K.H., Gavin, J.H., & Florey, A.T. (2002). Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. *The Academy of Management Journal, 45,* 1029-1045.

Haslam, S.A., & Ellemers, N. (2005). Social identity in industrial and organizational psychology: Concepts, controversies and contributions. In G.P. Hodgkinson (Ed.), *International Review of Industrial and Organizational Psychology, 20.* (pp. 39-118) Chichester: Wiley.

Hebert, B.G. & Vorauer, J.D. (2003). Seeing through the screen: Is evaluative feedback communicated more effectively in face-to-face or computer-mediated exchanges? *Computers in Human Behavior, 19,* 25-38.

Herzberg, F., Mausner, B., & Snyderman, B.B. (1959). *The motivation to work.* New York: John Wiley.

Hinkin, T.R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1,* 104-121.

Hogg, M.A. & Terry, D.J. (2000). Social identity and self-categorization processes in organizational contexts. *The Academy of Management Review, 25*, 121-140.

Hollingshead, A.B. (2001). Cognitive interdependence and convergent expectations in transactive memory. *Journal of Personality and Social Psychology, 81*, 1080-1089.

James, L.R., Demaree, R.G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology, 69*, 85-98.

Jehn, K., Northcraft, G., & Neale, M. (1999). Why differences make a difference: A field study of diversity, conflict, and performance in workgroups. *Administrative Science Quarterly, 44*, 741-763.

Jetten, J., Postmes, T., & McAuliffe, B.J. (2002). We're all individuals: group norms of

individualism and collectivism, levels of identification, and identity threat. *European Journal of Social Psychology, 32*, 189-207.

Jones, S.C. (1973). Self- and interpersonal evaluations-esteem theories versus consistency theories. *Psychological Bulletin, 79*, 185-199.

Kameda, T., Stasson, M.F., Davis, J.H., Parks, C.D., & Zimmerman, S.K. (1992). Social dilemmas, subgroups, and motivation loss in task-oriented groups: In search of an "optimal" team size in division of work. *Social Psychology Quarterly, 55*, 47-56.

Kashy, D.A. & Kenny, D.A. (2000). The analysis of data from dyads and groups. In H.T. Reis & C.M. Judd (Eds.), *Handbook of research methods in social psychology.* (pp. 451-477). New York: Cambridge University Press.

Katz, D. & Kahn, R.L. (1978). *The social psychology of organizations.* New York: Wiley.

Kenny, D.A. (1994). *Interpersonal perception: A social relations analysis.* New York: Guilford Press.

King, E.B., Kaplan, S., & Zaccaro, S. (2008). Metaperceptions in diverse workgroups: Intrapersonal perspectives and intragroup processes. In B. Mannix, M. Neale, & K. Phillips (Eds.), *Research on managing groups and teams.* (pp. 109-141). Oxford, UK: Elsevier.

Kirkman, B.L. & Shapiro, D.L. (2005). The impact of cultural value diversity on multicultural team performance. In D.L. Shapiro, M.A. Von Glinow, & J.L. Cheng (Eds.), *Advances in international management: Managing multinational teams.* (pp. 33-67). London: Elsevier.

Klimoski, R. & Mohammed, S. (1994). Team mental model: Construct or metaphor. *Journal of Management, 20*, 403-437.

Kozlowski, S.W.J. & Ilgen, D.R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest, 7,* 77-124.

Kozlowski, S.W.J. & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K.J. Klein & S.W.J. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations: Foundations, extensions, and new directions.* (pp. 3-90). San Francisco: Jossey-Bass.

Larson, J.R., Christensen, C., & Abbott, A.S. (1996). Diagnosing groups: Charting the flow of information in medical decision-making teams. *Journal of Personality and Social Psychology, 71*, 315-330.

Latané, B., Williams, K.D., & Harkins, S.G. (1979). Many hands make light the work: The

causes and consequences of social loafing. *Journal of Personality and Social Psychology, 37*, 822-832.

Leary, M.R. (1983). A brief version of the fear of negative evaluation scale. *Personality and Social Psychology Bulletin, 9,* 371-376.

Leary, M.R. & Baumeister, R.F. (2000). The nature and function of self-esteem: Sociometer theory. In M.P. Zanna (Ed.), *Advances in experimental social psychology.* (pp. 1-62). San Diego: Academic Press.

LePine, J.A., Colquitt, J.A., & Erez, A. (2000). Adaptability to changing task contexts: Effects of general cognitive ability, conscientiousness, and openness to experience. *Personnel Psychology, 53*, 563-593.

Levesque, M.J. (1997). Meta-accuracy among acquainted individuals: A social relations analysis of interpersonal perception and metaperception. *Journal of Personality and Social Psychology, 72*, 66-74.

Levesque, L.L., Wilson, J.M., & Wholey, D.R. (2001). Cognitive divergence: Shared mental models in software development teams. *Journal of Organizational Behavior, 22*, 135-144.

Lewis, K. (2003). Measuring transactive memory systems in the field: Scale development and validation. *Journal of Applied Psychology, 88*, 587-604.

Liang, D., Moreland, R., & Argote, L. (1995). Group versus individual training and group performance: The mediating role of transactive memory. *Personality and Social Psychology Bulletin, 21,* 384-393.

Lindsley, D.H., Brass, D. J., & Thomas, J.B. (1995). Efficacy-performance spirals: A multi-level perspective. *The Academy of Management Review, 20*, 645-678.

MacKinnon, D.P., Lockwood, C.M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the produce and resampling methods. *Multivariate Behavioral Research, 39,* 99-128.

MacPhail, L.H., Roloff, K., & Edmondson, A.C. (2009). Collaboration across knowledge boundaries within diverse teams: Reciprocal expertise affirmation as an enabling condition. In L.M. Roberts & J.E. Dutton (Eds.), *Exploring positive identities and organizations: Building a theoretical and research foundation*. (pp. 311-332). London:Psychology Press.

Mak, L. & Marshall, S.K. (2004). Perceived mattering in young adults' romantic relationships. *Journal of Social and Personal Relationships, 21¸* 469-486.

Malachowski, D. (n.d.). Ten reasons why people leave their job. Retrieved from the Salary.com website: *ww.salary.com/advice/layouthtmls/advl_display_nocat_Ser383_Par575.html*

Malloy, T.E., Albright, L., Kenny, D.A., Agatstein, F., & Winquist, L. (1997). Interpersonal perception and metaperception in nonoverlapping social groups. *Journal of Personality and Social Psychology, 72,* 390-398.

Malloy, T.E. & Janowski, C.L. (1992). Perceptions and metaperceptions of leadership: Components, accuracy, and dispositional correlates. *Personality and Social Psychology Bulletin, 18*, 700-708.

Malloy, T.E., Albright, L, & Scarpati, S. (2007). Awareness of peers' judgments of oneself: Accuracy and process of metaperception. *International Journal of Behavioral Development, 31*, 603-610.

Marcus, D.K. & Miller, R.S. (2003). Sex differences in judgments of physical attractiveness: A social relations analysis. *Personality and Social Psychology Bulletin, 29*, 325-335.

Maslow, A. (1943). A theory of human motivation, *Psychological Review, 50*, 370-396.

Mason, R.O. & Mitroff, I.I. (1981). *Challenging strategic planning assumptions.* New York: Wiley.

Mathieu, J.E., Heffner, T.S., Goodwin, G.F., Salas, E., & Cannon-Bowers, J.A. (2000). The influence of shared mental models on team process and performance. *Journal of Applied Psychology, 85*, 273-283.

Mohammed, S., Ferzandi, L., & Hamilton, K. (2010). Metaphor no more: A 15-year review of the team mental model construct. *Journal of Management, 36*, 876-910.

Molleman, E. & Broekhuis, M. (2012). How working in cross-functional teams relates to core attributes of professional occupations and the moderating role of personality. *Group dynamics: Theory, research, and practice, 16*, 50-67.

Molleman, E., Broekhuis, M., Stoffels, R., & Jaspers, F. (2010). Complexity of health-care needs and interactions in multidisciplinary medical teams. *Journal of Occupational and Organizational Psychology, 83,* 55-76*.*

Moreland, R.L. & Myaskovsky, L. (2000). Exploring the performance benefits of group training: Transactive memory or improved communication? *Organizational Behavior and Human Decision Processes, 82*, 117-133.

Morgeson, F.P. & Hofmann, D.A. (1999). The structure and function of collective constructs. *The Academy of Management Review, 24*, 249-265.

Morgan, B.B. & Lassiter, D.L. (1992). Team composition and staffing. In R.W. Swezey & E. Salas (Eds.), *Teams: Their training and performance*. (pp. 75-100). Westport, CT: Ablex Publishing Corporation.

Öhman, A. (2000). Fear and anxiety: Evolutionary, cognitive, and clinical perspectives. In M. Lewis & J.M. Haviland-Jones (Eds.), *Handbook of emotions*. (pp. 573-593). New York: The Guilford Press.

Ohtsubo, Y., Takezawa, M., & Fukuno, M. (2009). Mutual liking and meta-perception accuracy. *European Journal of Social Psychology, 39,* 707-718.

Okhuysen, G.A. & Eisenhardt, K.M (2002). Integrating knowledge in groups: How formal interventions enable flexibility. *Organization Science, 13*, 370-386.

Olivera, F. & Argote, L. (1999). Organizational learning and CORE processes in new product development. In L.L. Thompson, J. Levine, & D. Messick (Eds.), *Shared cognition in organizations: The management of knowledge.* (pp. 297-326). Mahwah, NJ: Laurence Erlbaum Associates.

Oltmanns, T.F., Gleason, M.E.J., Klonsky, E.D., & Turkheimer, E. (2005). Meta-perception for pathological personality traits: Do I know when others think that I am difficult? *Consciousness and Cognition: An International Journal, 14*, 739-751.

Oosterhof, A., Van der Vegt, G.S., Van de Vliert, E., & Sanders, K. (2009). Skill dissimilarity and complementarity: Distinctive effects on interpersonal citizenship behavior in work teams. *Group and Organization Management*, *34*, 536-562.

Palazzolo, E.T., Serb, D.A., She, Y.C., Su, C.K., & Contractor, N.S. (2006). Coevolution of communication and knowledge networks in transactive memory systems: Using computational models for theoretical development. *Communication Theory, 16,* 223-250.

Pearce, C.L. & Herbik, P.A. (2004). Citizenship behavior at the team level of analysis: The effects of team leadership, team commitment, perceived team support, and team size. *Journal of Social Psychology, 144*, 293-310.

Pedhazur, E.J. & Schmelkin, L.P. (1991). *Measurement, design, and analysis: An integrated approach.* Hillsdale, NJ, England: Lawrence Erlbaum Associates.

Pelham, B.W. & Swann, W.B., Jr. (1989). From self-conceptions to self-worth: The sources and structure of self-esteem. *Journal of Personality and Social Psychology, 57,* 672-680.

Pierce, J.L. & Gardner, D.G. (2004). Self-esteem within the work and organizational context: A review of the organization-based self-esteem literature. *Journal of Management, 30*, 591-622.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879-903.

Podsakoff, P.M., MacKenzie, S.B., Moorman, R., & Fetter, R. (1990). The impact of transformational leader behaviors on employee trust, satisfaction, and organizational citizenship behaviors. *Leadership Quarterly, 1*, 107-142.

Preacher, K.J., Rucker, D.D., & Hayes, A.F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research, 42,* 185-227.

Preuss, G.S. & Alicke, M.D. (2009). Everybody loves me: Self-evaluations and Metaperceptions of dating popularity. *Personality and Social Psychology Bulletin, 35*, 937-950.

Rand, D.G., Dreber, A., Ellingsen, T., Fudenberg, D., & Nowak, M.A. (2009). Positive interactions promote public cooperation. *Science, 325,* 1272-1275.

Randel, A.E. & Jaussi, K.S. (2003). Functional background identity, diversity, and individual performance in cross-functional teams. *The Academy of Management Journal, 46,* 763-774.

Reagans, R., Zuckerman, E., & McEvily, B. (2004). How to make the team: social networks vs. demography as criteria for designing effective teams. *Administrative Science Quarterly, 49*, 101-133.

Rentsch, J.R. & Woehr, D.J. (2004). Quantifying congruence in cognition: Social relations modeling and team member similarity. In E. Salas & S.M. Fiore (Eds.), *Team cognition: Understanding the factors that drive process and performance.* (pp. 11-31). Washington DC: American Psychological Association.

Rico, R., Sánchez-Manzanares, M., Gil, F., & Gibson, C. (2008). Team implicit coordination processes: A team knowledge-based approach. *The Academy of Management Review, 33*, 163-184.

Robb, F. & Myatt, R. (n.d.). *What really motivates people at work?* Retrieved from the Kaisen Consulting Ltd. website: http://www.kaisen.co.uk/pdf/what-really-motivates-people-at-work.pdf

Roberts, L.M., Dutton, J.E., Spreitzer, C.M., Heaphy, E.D., & Quinn, R.E. (2005). Composing the reflected best-self portrait: Building pathways for becoming extraordinary in work organizations. *The Academy of Management Review, 30*, 712-736.

Sadri, G. & Robertson, I.T. (1993). Self-efficacy and work-related behavior: A review and meta-analysis. *Applied Psychology, 42*, 139-152.

Salas, E., Sims, D.E., & Burke, C.S. (2005). Is there a "big five" in teamwork? *Small Group Research, 36*, 555-599.

Santuzzi, A.M. (2007). Perceptions and metaperceptions of negative evaluation: Group composition and meta-accuracy in a social relations model. *Group Processes & Intergroup Relations, 10*, 383-398.

Santuzzi, A.M. (2011). Anticipating evaluative social interactions involving persons with disabilities. *Rehabilitation Psychology, 56*, 231-242.

Schlenker, B.R. (2003). Self-presentation. In M.R. Leary & J.P. Tangney (Eds.), *Handbook of self and identity.* (pp. 492-518). New York: Guilford.

Schneider, B., Salvaggio, A.N., & Subirats, M. (2002). Climate strength: A new direction for climate research. *Journal of Applied Psychology, 87,* 220-229.

Sciangula, A. & Morry M.M. (2009). Self-esteem and perceived regard: How I see myself affects my relationship satisfaction. *The Journal of Social Psychology, 149*, 143-158.

Shechtman, Z. & Kenny, D.A. (1994). Metaperception accuracy: An Israeli study. *Basic and Applied Social Psychology, 15*, 451-465.

Sheldon, K.M. & Johnson, J.T. (1993). Forms of social awareness, their frequency and correlates. *Personality and Social Psychology Bulletin, 19,* 320-330.

Shelly, R.K. & Troyer, L. (2001). Emergence and completion of structure in initially undefined and partially defined groups. *Social Psychology Quarterly, 64*, 318-332.

Sherman, R.C., End, C., Kraan, E., Cole, A., Campbell, J., Klausner, J., & Birchmeier, Z. (2001). Metaperception in cyberspace. *Cyberpsychology & Behavior, 4*, 123-129.

Shrauger, J.S. (1975). Responses to evaluation as a function of initial self-perceptions. *Psychological Bulletin, 82*, 581-596.

Snijders, T.A.B. & Bosker, R.J. (1999). *Multilevel analysis: An introduction to basic and applied multilevel analysis.* London: Sage Publishers.

Snyder, M. (1974). Self-monitoring and expressive behavior. *Journal of Personality and Social Psychology, 30,* 526-537.

Sonnentag, S. & Volmer, J. (2010). What you do for your team comes back to you: A cross-level investigation of individual goal specification, team-goal clarity, and individual performance. *Human Performance, 23*, 116-130.

Spears, R., Ellemers, N., & Doosje, B. (2005). Let me count the ways in which I respect thee: Does competence compensate or compromise lack of liking from the group? *European Journal of Social Psychology, 35,* 263-279.

Spreitzer, G.M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *The Academy of Management Journal, 38*, 1442-1465.

Stajkovic, A.D., Lee, D., & Nyberg, A.J. (2009). Collective efficacy, group potency, and group performance: Meta-analyses of their relationships, and test of a mediation model. *Journal of Applied Psychology, 94,* 814-828.

Stasser, G., Vaughan, S.I., & Stewart, D.D. (2000). Pooling unshared information: The benefits of knowing how access to information is distributed among group members. *Organizational Behavior and Human Decision Processes, 82,* 102-116.

Steiner, I.D. (1972). *Group process and productivity*. New York: Academic Press.

Stevens, L.E., & Fiske, S.T. (2000). Motivated impressions of a power holder: Accuracy under task dependency and misperception under evaluation dependency. *Personality and Social Psychology Bulletin, 26,* 907-922.

Sullivan, M.P., & Reno, R.R. (1999). Perceiving groups accurately. *Group Dynamics, 3*, 196-205.

Swami, V., Waters, L., & Furnham, A. (2010). Perceptions and meta-perceptions of self and partner physical attractiveness. *Personality and Individual Differences, 49*, 811-814.

Swann, W.B. *&* Read, S.J. (1981). Self-verification processes: How we sustain our self-conceptions. *Journal of Experimental Social Psychology, 17*, 351-372.

Swim, J.K., Johnston, K., & Pearson, N.B. (2009). Daily experiences with heterosexism: Relations between heterosexist hassles and psychological well-being. *Journal of Social and Clinical Psychology, 28,* 597-629.

Tajfel, H. & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W.G. Austin (Eds.), *The Social Psychology of Intergroup Relations*. (pp. 7-24).

Chicago: Nelson-Hall.

Tan, H.T. & Jamal, K. (2006). Managing perceptions of technical competence: How well do auditors know how others view them? *Contemporary Accounting Research, 23,* 761-787.

Taylor, H. (2000). Three factors appear to have big impact on job satisfaction. (The Harris Poll #74, December 20, 2000). Retrieved from the Interactive Harris Poll website: *www.harrisinteractive.com/vault/Harris-Interactive-Poll-Research-three-factors-appear-to-have-big-impact-on-job-satisfaction-2000-12.pdf*

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology, 21.* (pp. 181-227). New York: Academic Press.

Tsai, F.F. & Reis, H. (2009). Perceptions by and of lonely people in social networks. *Personal Relationships, 16*, 221-238.

Tsui, A.S. & O'Reilly, C.A. (1989). Beyond simple demographic effects: The importance of relational demography in superior-subordinate dyads. *The Academy of Management Journal, 32*, 402-423.

Tuohy, A.P. & Wrennall, M.J. (1995). Seeing themselves as others see them: Scottish police officers' metaperceptions of public opinion. *Journal of Community and Applied Social Psychology, 5,* 311-326.

Turnley, W.H., Bolino, M.C., Lester, S.W., & Bloodgood, J.M. (2003). Impact of psychological contract fulfillment on the performance of in-role and organizational citizenship behaviors. *Journal of Management, 29*, 187-206.

Tyler, T.R. & Blader, S.L. (2003). The group engagement model: Procedural justice, social identity, and cooperative behavior. *Personality and Social Psychology Review, 7,* 349-361.

Valenti, M.A. & Rockett, T. (2008). The effects of demographic differences on forming intragroup relationships. *Small Group Research, 39*, 179-202.

Van de Ven, A.H., Delbecq, A.L., & Koenig, R. (1976). Determinants of coordination modes within organizations. *American Sociological Review, 41,* 322-338.

Van de Vijver, F.J.R. & Poortinga, Y.H. (2002). Structural Equivalence in Multilevel Research. *Journal of Cross-Cultural Psychology, 33*, 141-156.

Van der Vegt, G.S. & Bunderson, J.S. (2005). Learning and performance in multidisciplinary teams: The importance of collective team identification. *The Academy of Management Journal, 48,* 532-547.

Van der Vegt, G.S., Bunderson, J.S., & Oosterhof, A. (2006). Expertness diversity and interpersonal helping in teams: Why those who need the most help end up getting the least. *The Academy of Management Journal, 49,* 877-893.

Van der Vegt, G.S., Van de Vliert, E., & Oosterhof, A. (2003). Informational dissimilarity and organizational citizenship behavior: The role of intrateam interdependence and team identification. *The Academy of Management Journal, 46,* 715-727.

Vorauer, J.D. & Cameron, J.J. (2002). So close, and yet so far: Does collectivism foster transparency overestimation? *Journal of Personality and Social Psychology, 83*, 1344-1352.

Vorauer, J.D., Hunter, A.J., Main, K.J., & Roy, S.A. (2000). Meta-stereotype activation: evidence from indirect measures for specific evaluative concerns experienced by members of dominant groups in intergroup interaction. *Journal of Personality and Social Psychology, 78,* 690-707.

Vroom, V.H. (1964). *Work and motivation*. New York: Wiley.

Wageman, R. (1995). Interdependence and group effectiveness. *Administrative Science Quarterly, 40,* 145-180.

Wanous, J.P. & Hudy, M.J. (2001). Single-item reliability: A replication and extension. *Organizational Research Methods, 4,* 361-375.

Wasserman, S. & Faust, K. (1994). *Social network analysis*. Cambridge: University Press.

Wegner, D.M. (1986). Transactive memory: A contemporary analysis of the group mind. In B. Mullen & G.R. Goethals (Eds.), *Theories of group behavior.* (pp. 185-205). New York: Springer-Verlag.

Williams, K. & O'Reilly, C. (1998). Demography and diversity in organizations: A review of 40 years of research. In B.M. Staw & R. Sutton (Eds.), *Research in Organizational Behavior, 21*. (pp. 77-140). Greenwich, CT: JAI.

Williams, L. & DeSteno, D. (2008). Pride and perseverance: The motivational role of pride. *Journal of Personality and Social Psychology, 94,* 1007-1017.

Wood, R.E. (1986). Task complexity: Definition of the construct. *Organizational Behavior and Human Decision Processes, 37,* 60-82.

Wout, D.A., Murphy, M.C., & Steele, C.M. (2010). When your friends matter: The effect of

White students' racial friendship networks on meta-perceptions and perceived identity contingencies. *Journal of Experimental Social Psychology, 46,* 1035-1041.

Zhong, C., Phillips, K.W., Leonardelli, G.J., & Galinsky A.D. (2008). Negational categorization and intergroup behavior. *Personality and Social Psychology Bulletin, 34*, 793-806.

SAMENVATTING (SUMMARY IN DUTCH)

Mensen zijn van nature nieuwsgierig en geïnteresseerd in hoe ze op anderen overkomen. In het dagelijkse sociale verkeer denken ze dan ook regelmatig na over welke indruk ze bij anderen achterlaten. Gedachtes en ideeën over hoe iemand denkt door anderen te worden gezien ("*Ik denk dat zij me aardig vindt"*) worden *meta-percepties* genoemd, oftewel percepties van percepties. Ondanks de bewezen effecten van meta-percepties op menselijk gedrag en gevoel in allerlei verschillende situaties, is er verrassend weinig bekend over meta-percepties op de werkvloer. Bovendien werken werknemers steeds vaker in teamverband, waardoor ze intensief met elkaar moeten samenwerken en dergelijke percepties een grotere rol gaan spelen. Hierdoor wordt het steeds belangrijker om inzicht te verkrijgen in de ontwikkeling en effecten van meta-percepties in teams.

Een bijzonder soort meta-perceptie is *erkenning van expertise* – het idee dat je kennis en vaardigheden worden herkend en op waarde worden geschat door de rest van je team. Medewerkers zitten doorgaans in een team vanwege hun specifieke expertise ("*We hebben nog een financiële man nodig in dat team, kan Piet daar niet aan toegevoegd worden?*"). Deze expertise is één van de belangrijkste sociale categorieën die de identiteit van teamleden bepalen ("*Zij is econoom."*), of juist niet ("*Nee, zij is geen organisatiepsycholoog."*). Expertise is iemands totaal aan talenten, kwaliteiten en vaardigheden opgebouwd door opleiding en werkervaring en is een positieve eigenschap; mensen zijn trots op wat ze kunnen en weten en ontlenen hier een deel van hun eigenwaarde aan. Om die reden kan verwacht worden dat erkenning van expertise teamleden het gevoel geeft bijzonder te zijn en een belangrijke bijdrage te kunnen leveren aan het team en daarom sterk motiverend werkt.

Helaas is hier nog maar weinig empirisch onderzoek naar verricht. Daarom richt ik mij in dit proefschrift op erkenning van expertise: de percepties van medewerkers dat hun expertise wordt herkend en op waarde wordt geschat door hun teamgenoten. In drie studies heb ik geprobeerd de volgende vragen te beantwoorden: Hoe ontwikkelt erkenning van expertise zich in een team en wat zijn de gevolgen hiervan voor individuele teamleden en voor teams in hun geheel?

In Hoofdstuk 1 geef ik een overzicht van de meta-perceptieliteratuur. De empirische artikelen die een zoektocht naar de termen "meta-perception" en "metaperception" opleverde, kunnen ingedeeld worden in vier clusters van

psychologische literatuur: intergroepsrelaties, interpersoonlijke percepties, intieme relaties en klinische psychologie. Dit overzicht legt een drietal lacunes bloot in de meta-perceptieliteratuur met betrekking tot, respectievelijk, de setting, de inhoud en de effecten van de onderzochte meta-percepties. Ten eerste valt op dat onderzoek naar meta-percepties op de werkvloer en, met name, in werkteams nagenoeg ontbreekt. Ten tweede hebben de weinige studies naar meta-percepties op het werk overwegend betrekking op persoonlijkheidskenmerken of stereotypes en nauwelijks op taakrelevante eigenschappen. Ten derde is er een gebrek aan empirische kennis van de effecten van meta-percepties. Als een eerste aanzet tot het vullen van deze lacunes, richt ik mij om die redenen op *erkenning van expertise* als een vorm van taakgerelateerde meta-percepties in werkteams.

Om de ontwikkeling en effecten van erkenning van expertise te onderzoeken, moet het concept eerst helder worden gedefinieerd en meetbaar worden gemaakt. Daarom is Hoofdstuk 2 gewijd aan de constructie en validatie van een schaal op zowel individueel als teamniveau. Het idee achter deze multi-level benadering is de verwachting dat vanuit individuele erkenning van expertise ("*Ik denk dat de andere teamleden goed op de hoogte zijn van mijn kennis en vaardigheden*") een teamgedachte met dezelfde inhoud kan ontstaan. Deze teamgedachte wordt reciproke erkenning van expertise genoemd en houdt in dat teamleden impliciete overeenstemming bereiken over de mate waarin ze het gevoel hebben dat hun expertise binnen hun team wordt herkend en gewaardeerd. Dit houdt in dat er niet alleen variatie zou zijn in de hoogte van erkenning van expertise *binnen* teams (Jan kan bijvoorbeeld het idee hebben dat andere teamleden nauwelijks op de hoogte zijn van zijn expertise, terwijl zijn teamgenoot Klaas die erkenning juist wel ervaart), maar ook *tussen* teams. (In het ene team kunnen teamleden sterk het gevoel hebben dat anderen op de hoogte zijn van wat ze kunnen en weten, maar in het andere team helemaal niet.)

Om deze ideeën te toetsen valideer ik de ontwikkelde items voor het construct erkenning van expertise op zowel individueel als teamniveau met behulp van data uit een vragenlijststudie onder 155 hogeropgeleide werknemers in teams van Nederlandse organisaties uit diverse bedrijfssectoren. In een individuele confirmatieve factoranalyse laat ik zien dat erkenning van expertise verschilt van gerelateerde constructen als self-efficacy en teambased self-esteem. De confirmatieve factoranalyse op teamniveau bevestigt vervolgens dat reciproke erkenning van expertise, zoals verwacht,

raakvlakken vertoont met de constructen psychologische veiligheid en geloofwaardigheid, maar daar ook duidelijk van verschilt. Kortom, de bevindingen uit Hoofdstuk 2 laten zien dat erkenning van expertise en reciproke erkenning van expertise twee unieke constructen zijn die theoretisch en empirisch verschillen van elkaar en van gerelateerde constructen op zowel individueel als teamniveau.

In Hoofdstuk 3 bouw ik voort op de inzichten van Hoofdstuk 2 en toets ik een nomologisch netwerk van erkenning van expertise in een dataset van 86 teams bestaande uit 400 hogeropgeleide medewerkers en hun teamleiders. Ik beargumenteer en toon aan dat het relatieve expertiseniveau van individuele teamleden ten opzichte van de rest van het team en overeenkomst in opleidingsachtergrond met de andere teamleden positieve voorspellers zijn van erkenning van expertise.

Expertise is in een team één van de belangrijkste basis voor het verkrijgen van status. Hoe meer expertise een teamlid bezit, des te meer status hij of zij vergaart. Eerder onderzoek heeft aangetoond dat teamleden met veel status meer spreektijd krijgen dan teamleden met weinig status en dat hun acties en uitingen meer aandacht krijgen. Deze extra aandacht zou teamleden met relatief hoge expertiseniveaus het idee geven dat de andere teamleden hun expertise erkennen, terwijl teamleden met relatief lage expertiseniveaus dit idee minder krijgen.

Het idee achter gelijkheid in opleidingsachtergrond als tweede positieve voorspeller van individuele erkenning van expertise komt uit de diversiteitsliteratuur. Uit eerder onderzoek is gebleken dat naarmate mensen gelijker zijn aan anderen, ze denken dat die anderen hen beter kennen en ze transparanter voor hen zijn. Analoog hieraan verwachtte ik dat mensen aannemen dat ze transparanter zijn voor mensen met een zelfde opleidingsachtergrond dan voor mensen die hierin verschillen. Mijn resultaten tonen inderdaad aan dat een zelfde opleidingsachtergrond leidt tot meer erkenning van expertise.

Bovendien zijn erkenning van expertise en reciproke erkenning van expertise beide onafhankelijk van elkaar positieve voorspellers van individuele prestatie zoals gescoord door de leidinggevende. Individuele teamleden die hoog scoren op erkenning van expertise of die in een team zitten waarin alle leden elkaars expertise herkennen en waarderen (reciproke erkenning van expertise) presteren beter.

Op teamniveau bevestig ik mijn verwachting dat kleine teams hoger scoren op reciproke erkenning van expertise. In kleinere teams zijn teamleden zichtbaarder dan in

grote teams en kunnen ze gemakkelijker aan anderen laten zien wat ze kunnen. Zoals verwacht ontwikkelen teamleden in kleine teams eerder het gevoel dat anderen op de hoogte zijn van hun expertise.

Ook toon ik aan dat teams die relatief lang bestaan hoger scoren op reciproke erkenning van expertise. De lengte van de samenwerking als team is een proxy voor hoe goed teamleden elkaar kennen. Hoe langer teams bestaan, des te meer de leden van zichzelf hebben kunnen laten zien.

Als laatste laat ik in dit hoofdstuk zien dat een hoger niveau van reciproke erkenning van expertise positieve gevolgen heeft voor de prestatie van het team, maar dat dit alleen geldt voor teams met een goed coördinatiemechanisme om de activiteiten van de teamleden op elkaar af te stemmen.

In Hoofdstuk 4, onderzoek ik hoe en wanneer reciproke erkenning van expertise teamprestaties verbetert in een andere setting, namelijk bij 226 leden van 39 teams die meededen aan een Management Game. Allereerst repliceer ik de resultaten uit Hoofdstuk 3 dat reciproke erkenning van expertise positief is gerelateerd aan teamprestatie, maar alleen in teams met een goed coördinatiemechanisme. Vervolgens breid ik dit model uit door aan te tonen dat de gezamenlijke effecten van reciproke erkenning van expertise en een goed coördinatiemechanisme op teamprestatie worden gemedieerd door gecoördineerde actie. Met andere woorden, teams waarin de leden het idee hebben dat hun expertise wordt gewaardeerd, presteren significant beter dan teams waarin dit minder het geval is. Maar niet altijd. Als teamleden hun taken niet goed onderling coördineren, maakt het niet uit of ze zich gewaardeerd voelen en daardoor harder werken, omdat werk dan dubbel wordt gedaan of blijft liggen. Een voorbeeld hiervan is een cross-functioneel team waarin de marketingmanager hard werkt aan een nieuwe marketingstrategie om de vraag naar producten te doen stijgen zonder met de productiemanager af te stemmen of de productieafdeling deze verhoogde capaciteit wel aan zou kunnen. In dat geval kunnen alle betrokkenen nog zoveel erkenning van expertise ervaren en daardoor gemotiveerder en harder werken, als ze hun taken niet op elkaar afstemmen zal dat geen effect sorteren voor de gecoördineerde actie van het team en voor de teamprestatie.

In Hoofdstuk 5 integreer ik de gevonden resultaten van de bovengenoemde studies en eindig met enkele aanbevelingen voor de praktijk. De bevindingen gerapporteerd in deze dissertatie laten zien dat het voor goede individuele en

teamresultaten cruciaal is dat teamleden zich gewaardeerd voelen door hun teamgenoten. Deze bevinding onderstreept het belang van goed waarderingsmanagement binnen organisaties. Tegelijkertijd is erkenning van expertise en de daaruit voortkomende motivatie alleen niet voldoende voor een goede teamprestatie, maar moeten teams bovendien beschikken over een goed coördinatiemechanisme. Teamleden kunnen nog zo gemotiveerd zijn en hard werken, maar als ze om wat voor reden dan ook hun activiteiten niet goed op elkaar afstemmen, zal het team onvoldoende de vruchten kunnen plukken van hun inspanningen.

Managers kunnen hier rekening mee houden door aandacht te besteden aan de socialisatie van nieuwkomers en hen ruimte te bieden om hun kwaliteiten te demonstreren door bijvoorbeeld een presentatie te houden over een goed afgeronde klus. Het idee gewaardeerd te worden kan mogelijk vergroot worden door cross-training. Dit houdt in dat teamleden korte tijd elkaars taken vervullen en daarin getraind worden. Zo krijgen ze meer kennis over elkaars werk en kwaliteiten en begrip voor eventuele moeilijkheden in het uitoefenen van bepaalde taken. Daarnaast is het belangrijk dat teams een goed coördinatiemechanisme ontwikkelen en iedereen goed op de hoogte is van wie waar goed in is, zodat taken niet dubbel half of helemaal niet gebeuren door afstemmingsproblemen. Een manager kan dit bevorderen door de teamleden meer afhankelijk van elkaar te maken met betrekking tot zowel hun taken als uitkomsten zodat ze gestimuleerd worden hun werk op elkaar af te stemmen.

DANKWOORD (ACKNOWLEDGEMENTS)

8 buitenlandse congressen, 7 vakgroepuitjes, 6 waterpolotoernooien, 5 cavia's, 4 verkeringen, 3 begeleiders, 2 publicaties =>1 proefschrift.

"Wanneer hebben we een feestje?" Elke keer dat mij deze vraag werd gesteld, antwoordde ik dat het bijna zover was. En nu is het dan ECHT zo ver. Na acht jaar als aio, docent en universitair docent bij de vakgroep HRM & Organizational Behavior te hebben gewerkt is mijn "boekje" af.

Bij de totstandkoming van dit proefschrift zijn veel mensen betrokken die ik dank ben verschuldigd. Allereerst bedank ik mijn begeleiders: Gerben van der Vegt, Eric Molleman en Etty Jehn. Als kersverse arbeids- en organisatiepsycholoog volgde ik Gerben naar Bedrijfskunde voor een promotieonderzoek naar teams. Gerben, bedankt voor deze kans, je betrokkenheid en je onvoorwaardelijke vertrouwen. De onvermijdelijke momenten dat ik me wel eens afvroeg of mijn proefschrift ooit af zou komen, reageerde je verbaasd: "Daar heb ik nog nooit aan getwijfeld, jij wel dan?!" Eric, veel dank voor de contactmomenten, je stabiliteit en razendsnelle feedback. Als leidinggevende ga je door het vuur voor je werknemers en zorg je dat hen veel bureaucratische rompslomp en gedoe bespaard blijft. Dit waardeer ik enorm. Etty, thank you for being my third promotor and for your hospitality during my visit in Melbourne.

Next, I would like to thank the reading committee, Professor Onne Janssen, Professor Stuart Bunderson en Professor Karen van Oudenhoven-van der Zee. Thank you for taking the time to read and evaluate my dissertation. Karen, voor mij is het extra bijzonder dat jij deel uitmaakt van de leescommissie. Je was mijn afstudeerbegeleider bij psychologie en bent een voorbeeld voor me. Bedankt voor je geloof in mij. Jij hebt mij in de praktijk laten zien hoe motiverend erkenning van expertise kan werken.

Alle collega's van HRM & OB wil ik van harte bedanken voor de fijne en open werksfeer met als hoogtepunt onze reis naar Istanbul. Naast alle inhoudelijke gesprekken en discussies over methodes, statistiek en theorie, was er veel ruimte voor gezelligheid en humor. Veel collega's zijn in de loop der jaren vrienden geworden en een aantal wil ik dan ook in het bijzonder bedanken. Aio's van het eerste uur Marian, Aad, Simon, Nele, Dinette, Niels, Frouke en Dennis, bedankt voor de kritische feedback en de

interessante discussies die we voerden als onderdeel van onze onderzoeks- en leesgroep. Inge † ook al was het veel te kort, je intelligente humor was onnavolgbaar en zal ik nooit vergeten. Sanne en Gerdien, de laatste jaren liep ik regelmatig bij jullie binnen om even stoom af te blazen of iets op jullie whiteboard te tekenen. Dank voor jullie relativeringsvermogen en gezelligheid. Sanne, sinds ik in Den Haag woon, ben ik mijn tennismaat kwijt. Met veel plezier heb ik alle keren (bijna) van je gewonnen en voor revanche ben je welkom in Den Haag. Dennis en Roy, de roadtrip met jullie rond Lake Erie was onvergetelijk. Dank voor dit prachtige avontuur.

Tineke, Hilde en Elli, het was een warm gevoel om altijd welkom te zijn op het secretariaat voor wat aanspraak tussen het onderwijs, de analyses en het typen door. Janka, dank voor je inspiratie, je positiviteit en je humor. Ons side-project samen met Nanja staat toch maar mooi in Leadership Quarterly. Dear Jen, thanks for bringing me a hug whenever I needed one, you've become a real friend. Ben en Ellen, dank dat ik zo lang in jullie huis mocht wonen en mocht genieten van jullie prachtige tuin. Ten slotte wil ik de prettige samenwerking met vele anderen tijdens mijn onderwijsklussen noemen. Monique, Maryse, Onne en Bernard, dank voor de fijne samenwerking. Daarnaast heb ik veel gehad aan de prettige contacten met andere collega's die ik in de loop de jaren heb mogen ontmoeten. Ik heb me vaak bevoorrecht gevoeld dat ik voor congressen naar Stockholm, Montreal, Chicago, Atlanta, Sheffield, Adelaide en Birmingham mocht. En dat nog los van alle KLI-cursussen en nationale congressen door het hele land.

Lieve paranimfen, Roy en Esther. Dank dat jullie mijn paranimfen willen zijn. Naast het feit dat mijn blonde haar zo mooi uitkomt tussen jullie donkere bossen, heb ik jullie gekozen omdat jullie mij de laatste jaren erg dierbaar zijn geworden. Roy, na de roadtrip ben jij mijn homie geworden. Hoe druk je het ook hebt, je maakt altijd tijd voor mij en doet daarbij net alsof dat vanzelfsprekend is. Lieve Esther, dankzij Floor zijn wij dikke vriendjes geworden, fijn dat je mij op deze belangrijke dag wilt bijstaan!

Verder wil ik mijn familie en vrienden bedanken voor de afleiding en de steun in de afgelopen jaren. Een aantal wil ik expliciet noemen. Teleurgestelde paranimfen moeten er ook zijn. Daan, Wies, Linda, Sanne, Marjolein, Sjoukje, onze weekenden in de Kiel zijn inmiddels traditie geworden. Hopelijk zetten we deze traditie nog lang voort. Lieve Oude Ballonnen, onze jaarlijkse activiteiten geven me altijd weer nieuwe energie en inspiratie, dank! Anna, we zijn al vriendinnen sinds de tweede klas van het

gymnasium, dank dat je al die tijd mijn steun en toeverlaat bent geweest. Buurvrouw Suzanne, dank voor het luisteren tijdens alle kopjes koffie op ons Haagse dakterras tussen het typen door. Marieke, jouw relativeringsvermogen en ongekende intelligentie en het koffiedrinken toen je nog in Groningen woonde en via skype sinds je in Engeland woont, hebben mij vaak geholpen mijn "problemen" in perspectief te plaatsen. Janneke, van jou heb ik veel geleerd. Dank voor al je steun nu en in het verleden. Ik heb veel aan jou te danken.

Bert en Andrea, mijn lieve ouders, zonder jullie had dit proefschrift er niet gelegen en ik dank jullie voor jullie onvoorwaardelijke liefde en steun. En natuurlijk mijn zusje Annelies, waar ik altijd terecht kan.

Lieve Lizette, na 3 jaar heen en weer pendelen tussen Den Haag en Groningen, wonen we eindelijk samen. Het was het wachten waard! Ik geniet van elke dag met jou en alles wat we samen ondernemen, zoals onze prachtige reizen naar Canada, Brazilië en IJsland. Ik kan niet wachten om te zien wat de toekomst ons samen brengt!

En nu is het tijd voor het feestje.

Den Haag, augustus 2013
Hanneke Grutterink